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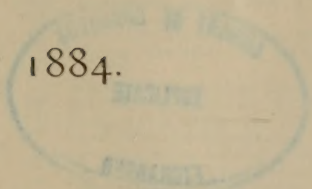
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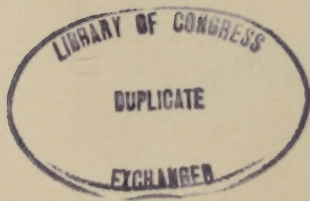
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She then told her friend how she guessed
That in a new lens she'd invest,
So she bought a Dallmeyer,
And though it cost higher
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For dry plates she then made a dash,
But found that so many were trash,
She believed they all lied,
Until Eastman's she tried,
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ANTHONY'S

PHOTOGRAPHIC BULLETIN

FOR JANUARY, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

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Anthony's
Photographic Bulletin,
ILLUSTRATED.

Terms for 1884: Two Dollars.

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A Brief Retrospect.

BEFORE entering upon the new year, it may not be amiss to hurriedly cast a glance backward to note the more salient points of progress made in the theory and practice of photography during the twelve months just closed.

That period was remarkable for activity, but the efforts of investigators and experimentalists seem to have been directed more to the development of the relatively old than to the discovery of anything fundamentally new.

No radical change of any moment can be recorded, either as to the materials or methods employed—nothing has been successfully substituted for the glass support; no substance has been offered to replace the gelatine vehicle, or the bromide of silver excitant, or, in fact, anything to entirely supersede in the subsequent operations of development and fixing of the negative; and finally, nothing has been proposed that promises to supplant the use of albumenized paper for positive reproductions.

Practically, however, many advances have been made. Primarily, in the quality of the gelatino-bromide emulsion a marked improvement is manifest. The difficulty involved in its preparation in quantities has been largely overcome—that of rendering it homogeneous. The fact of its extreme

In America, as well as in Europe and elsewhere, there has been a vast increase in the number of amateurs; many new societies have been formed, and the accessions include persons of almost every occupation, or of leisure, old and young, male and female.

Commercially the year has been a prosperous one, and there are few photographers who have not been kept busy. Prices in some instances have been low, unnecessarily so, perhaps, in many cases, and although the dry plate "boom" may have so far subsided that the public have begun to look upon "instantaneous photographs" as a matter of course, we have abundant ground for the belief that "there is a good time coming."

Apparatus for Supplying Sensitive Plates in Photographic Cameras.

THE following is the specification of invention by MESSRS. JAMES HENRY HARE and HENRY JAMES DALE, both of London, for an invention patented under the above title:

Our invention relates to means of supplying sensitive plates to a photographic camera, our object being to have a number of such plates ready to be acted on by exposure in the camera either in direct succession or in any desired order, and to retain these plates protected against farther active action until they can be conveniently developed.

For this purpose we make a box of rectangular form, of a depth somewhat more than double the width of a plate, so that it can contain two tiers of plates, the one tier above the other. Each sensitive plate, if it be transparent, is fitted in a light frame having an opaque backing, which may be a thin plate of metal, and a number of these frames, with the sensitive plates secured in them in each case by a suitable turn-button or catch, are placed in the lower part of the box, where they are pressed forwards toward the front by light springs. Above this lower tier of plates we place an

upper tier, which must consist of a number less at least by one than the number in the lower tier. The front of the box is made with a slide or shutter such as is usually employed for exposing plates in cameras. The box is fitted to the back of the camera by tenons sliding in grooves or otherwise. On withdrawing the shutter the front plate of the lower tier is exposed, and on closing the shutter it is protected against farther active action. The box being then removed and turned over and over, this front plate finds its way to a front place in the upper tier, whilst the back plate on the upper tier descends behind the plates of the lower tier. On replacing the box the plate which was originally second of the lower tier can be exposed, or, if it should be desired to pass several without exposure, the box can be turned over and over several times so as to change the position of several of the plates. Thus plate after plate can be exposed either in direct succession or in any desired order. For convenience of ascertaining which of a number of plates occupies at any time the position for exposure we provide in the shutter a hole fitted with non-actinic glass, and we mark each plate-frame with a number or other distinguishing symbol which can be seen through the glass.—*British Journal of Photography.*

Annals.

THE many photographers who look forward to the pleasure of reading the *British Journal Almanac* and the *Year Book of Photography* are hereby advised that the issues for 1884 are now at hand.

Upon inspection of their contents we find that they are as interesting and valuable as heretofore, and we urge our readers to supply themselves early, to avoid the risk of being left when the editions are exhausted.

We cannot conceive that any intelligent photographer would consent to remain without having on hand all these books, so valuable as aids or references. Price 50 cents, single; 75 cents for the two

Opalescence in Gelatine Negatives.

BY H. Y. E. COTESWORTH.

How seldom do we see the deepest shadows of a gelatine negative, or even the margin protected by the rebate of the dark slide, represented by perfectly clear glass! Perhaps, as regards the former, the cases are extremely few where the result is to be anticipated or desired when a proper exposure has been given; but when the unexposed margin of the plate is in question, there is not a shadow of doubt that, where all conditions are as they should be, the glass ought to be perfectly undimmed by deposit or veil of any sort.

I am not alluding now to fog of the ordinary description, nor even to what is sometimes known as "slight veil," though these are rarely altogether absent if the negative be carefully examined when pressed in contact with a sheet of clean, white paper, however clean and pure the transparent portion may appear when examined by transmitted light. The defect, if such it can practically be considered, is rather of the character of a faint opalescence, which clearly arises from no deposit of silver nor from any form of developing stain.

I was inclined at one time to attribute it to lime, either contained in the gelatine itself or precipitated in the film from the water by the ammonia employed in developing. But this supposition became untenable when I reflected that, whereas a bath of weak hydrochloric acid sufficed to entirely remove the much denser "cloud" of lime produced by washing the film with ordinary hard water after ferrous oxalate development, the slight opalescence I refer to entirely resisted such treatment. Indeed, where the phenomenon exists, it is possible to entirely remove the image itself by resorting to the strongest measures, without in any way modifying the opalescence, which remains evenly spread over the whole film after the entire disappearance of the silver image. Again: plates of the same batch which have, after development, shown this opalescent appearance, have been soaked in dilute ammonia—that is, water con-

taining the same proportion of ammonia as would be present in an ordinary developing solution—and after careful washing fixed without development. These have been perfectly free from the defect, which cannot, therefore, arise from precipitation of lime salts by the ammonia.

Noticing at last that the defect was generally visible, or at least more prominent, when the clearing solution of acid and alum (or in a less degree plain alum) was used, it struck me that it was most likely due to some reaction between the alum bath and the hypo. remaining in the film after fixing. A very few experiments proved this to be undoubtedly the case; and though alum is certainly not the only substance that conduces to the production of this veil, I have little hesitation in saying that hypo. is almost invariably at the bottom of it.

Much has been said in past years on the subject of the result of the mutual decomposition of alum and hypo. when brought together in solution or in a gelatine film. In the former case the reaction may be easily followed and accounted for; but when it comes to the consideration of an imperfectly washed gelatine negative film subsequently treated with alum or a mixture of alum and an acid, numerous complications are introduced, the result varying with the amount of washing after fixing, the length of time the plate was in the fixing bath, as well as the strength and age of the fixing solution employed. Suffice it to say that the result may be the deposit of a minute quantity of sulphur and (or) sulphide of silver in the film in an extremely fine state of division—varying, of course, with the conditions, but in any case producing the transparent opalescence of which I have spoken.

As the result of numerous experiments I have come to the conclusion that in at least the great majority of cases the opalescence is caused by sulphur alone, and for these reasons: Though when alum and hyposulphite of soda are mixed in plain solution a certain proportion of sulphur is found mixed with the deposit that occurs, it is in comparatively small proportion. But if the mixture of alum and acid be substituted for

the plain alum solution then a much more copious precipitation of sulphur occurs, the acid, in fact, playing a stronger part than the alum. So in using the acid clearing solution a far greater amount of opalescence is produced than is the case with alum alone. It may be said that if any hyposulphite of silver be left in the film the acid will convert that into sulphide, but I do not think so; at any rate, plates purposely soaked in solutions of plain hypo. and hypo. half saturated with silver haloids have, when slightly rinsed and treated with alum and acid, showed no perceptible difference. The silver is, I am inclined to believe, converted into *sulphate*, and as such is washed out of the film.

But the most cogent reason for laying the blame upon precipitated sulphur—and here lies the gist of what I have to say—is that the opalescence or veil is removed by sulphur-solvent, or, at least, such as can be made to penetrate the film, and these may, therefore, be used as the remedy. Thus, by immersing the opalescent sulphur-containing film in a saturated solution of sulphite of soda for some time, the sulphur is dissolved, forming with the sulphite *hypo* sulphite of soda, and so removing the veil.

Sulphurous acid also acts as a clearer, and it is still the subject of inquiry with me as to whether this may not profitably be used to replace the hydrochloric, citric, oxalic, and other acids usually employed in combination with alum.—*British Journal of Photography*.

Photography in the Albatross.

THE United States Fish Commission Steamer Albatross is provided with a scientific and chemical laboratory, in one corner of which there is a photographic dark room. The vessel is fitted with all modern improvements, and is supplied with one hundred and twenty 8-candle B lamps of the Edison incandescent system, the observations being conducted regularly throughout the night as well as by day. In addition there is an arc-lamp of great power, for il-

luminating the surface of the water, and a powerful submarine lamp, which can be lowered to any depth not exceeding one thousand feet.

The photographic section is in complete running order, and affords the means of illustrating all sorts of objects, whether large or microscopic, and contains, besides, improved appliances for registering the intensity of light at different depths of the sea.

Those who would be pleased to read further concerning the equipment and other details of the Albatross are referred to an interesting article which appeared in *Science* for July, 1883, published in Cambridge, Mass.

To Correspondents.

Amateur.—Add to your old toning baths enough sulphuric acid to render the solution distinctly acid; then add the protosulphate of iron, and the gold left in the solution will be thrown down in the metallic state.

A much simpler mode, however, is to place a piece or strip of clean tin plate in the solution. The gold remaining in it will be gradually deposited upon the surface of the tin, and can be recovered in the pure metallic shape by merely bending the piece of tin; the gold will fall off in plates and can be redissolved in *aqua regia* without any further proceeding.

Saved by a Photographer.

FIRE was discovered by Mr. Joseph Lang, who occupies the second floor of the building, No. 395 Eighth Avenue, proceeding from the store underneath. Mr. Lang was awakened by the smoke and quickly escaped with his wife to the street. Afterwards he remembered that an aged lady and her son were asleep on an upper floor, and rushed up stairs through the smoke to rescue them. The old lady was too much in fright to descend, but was assisted safely to the roof, from whence she fled to an adjoining building. Mr. Lang is reported to have sustained a loss of \$500.

Ausführliches Handbuch der Photographie.

Part V.—By Dr. J. M. EDER,
(*Knapp, Halle, Germany*).

PORTRAITURE in the open air, and in the studio, is exhaustively treated of in the fifth part of Dr. Eder's handbook; and very full details as to studio construction are given, together with numerous illustrative drawings of typical studios; the circumstances which render special forms desirable being

thoroughly discussed. One minor trouble to the photographer is the dripping of water from his glass roof, and it must be remembered that this not only arises from actual leakage, but also from the condensation of moisture on the inner surface of the glass. In order to avoid annoyance from this source, it becomes very desirable to make use of grooved sash bars, such as are shown in section by fig. 3, and the rebate on one side should be a little deeper than



Fig. 1.



Fig. 2.



Fig. 3.

that on the other side, as shown in the figure. By adopting this plan, and cutting the glass obliquely (Fig. 2), rather than at

right angles (Fig. 1), all the troubles incident to a leaky roof are obviated. This principle, as carried out in the studio of

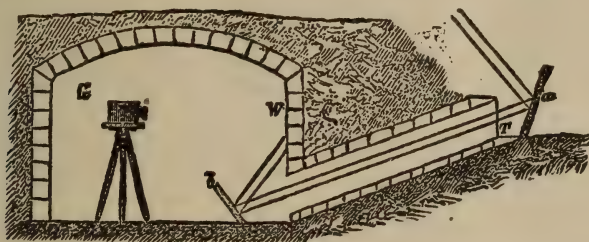


Fig. 4.

Luckhardt, has already been laid before our readers, and fuller details will be found in the *Studios of Europe*.

The use of backgrounds, reflectors, and screens by the portraitist is thoroughly treated of, both from theoretical and practical points of view, the methods to be adopted being fully illustrated by wood engravings. As an instance of photographic work under exceptionally difficult conditions, we find mention made of the plan which Evans adopted in obtaining a photo-

graph of a portion of the interior of one of the tunnels of the Pacific Railroad, two mirrors being arranged, as shown in the diagram, to reflect direct sunlight into the tunnel. Dr. Vogel adopted a similar method in photographing certain excavations in Egypt.

The arrangements best suited for the dark room are treated of as thoroughly as those required for the studio; and considering that, since the advent of the gelatinobromide process, the whole aspect of the

dark room has changed, this portion of the book will be read with special interest. The various forms of tent and portable laboratory are next described, after which, glass plates, plate-boxes, holders, baths, measures, and other mechanical appliances, are comprehensively treated of. It is often convenient to measure small quantities by drops; and to facilitate this, a table is given, showing approximately the number of drops which will weigh one gram (15.43 grains).

Name of Fluid	Number of Drops to one Gram.
Water,	20
Nitric acid,	27
Hydrochloric acid,	20
Sulphuric acid,	28
Ether,	83
Alcohol,	62
Oil of turpentine,	55
Castor oil,	44
Olive oil,	47

Of course these figures are approximate, as drops vary according to temperature and the nature of the vessel from which they fall. If the numbers are multiplied by four, they will nearly indicate the number of drops to one dram of sixty grains. — *London Photo. News.*

An Easy Method of Intensification for Black and White Subjects.

BY WILLIAM BROOKS.

TAKING for granted that the bath and wet collodion have not been quite banished from the studio, especially for subjects like the above, I venture to put forward a method of intensification I have worked very successfully for some years past. It involves very little trouble, and all that is desired is most easily obtained.

At times photographers are asked by their clients to copy an old engraving, and, as a rule, most photographers, in the ordinary way of business, would rather be without such work. If the customer be told that it is not worth the photographer's while to do it, perhaps he may find out some other who will; and my advice to all

photographers is never to turn an order away, however small, or you may lose your client—not only for such an order as the one in question, but also for any other commission. As regards myself I accept everything that is offered and do it; and I think it well to be “coached up” in all matters as to the easiest and most simple way of accomplishing these little, difficult matters. I know well to my cost how at times I have missed some good negatives (gelatine ones) before I adopted the method of intensification I published in *The British Journal of Photography* in August last. I have found it remunerative, and many other photographers have adopted it as successfully as myself.

Years ago line engravings to copy were a great source of annoyance to me. I remember the time I adopted the pyro. intensification as practiced with wet collodion, and, after working away for some considerable time to get sufficient density, I found on drying the negative that the collodion film had all split to ribbons off the plate, owing to the astringent properties of the pyro. contracting the film. Sometimes I used bichloride of mercury, iodide of potassium, followed by that odorous compound—hydrosulphide of ammonium. Most of the photographers of the present day have, fortunately, none of this beautiful compound to deal with, as it would just about “settle” any one with a bilious attack.

Then, again, the uranium intensifier was put forward, but that was very short-lived. Then came the lead intensifying process of Eder and Töth, which, to the best of my recollection, was a very troublesome affair, especially if there were the slightest deposit on any part of the tissue in the negative. This process I was obliged to abandon as unsatisfactory—at least, it was so in my hands—though I heard that some worked it successfully. I never like having to manipulate with either mercury or lead salts, owing to their having such baneful effects on the human system, especially with some constitutions. I have heard of a process in which bichromate of potash and sulphate

of iron were used in some form or other to gain density, and I believe with great success.

With none of these systems have I succeeded as well as with my own, which is as follows: Take the negative of the engraving to be copied in the ordinary way with wet collodion and the nitrate of silver bath, taking care not to over-expose, but give it sufficient exposure to preserve clear glass to represent the black lines. After it is fully out with the ordinary iron developer of the usual strength (say)

Protosulphate of iron, . . . 15 grains,
Glacial acetic acid, . . . 15 minims,
Water, 1 ounce,

well wash and intensify with the ordinary pyro. intensifier, namely—

Pyrogalllic acid, 2 grains.
Citric acid, 1 grain.
Water, 1 ounce.

Just get a little intensity, but do not push for it; fix with cyanide of potassium (not hypo.); well wash, and put into a bath of—

Bichloride of platinum, . . . 4 grains.
Nitric acid, 1 drop.
Water, 10 ounces.

Keep the dish slightly rocking to get even action over the whole film; allow it to remain until the film is black, which will be in about two or three minutes, and it will be noticed should there have been any *slight* veil on the lines in this bath they will have cleared and brightened up. It is very curious that it should have this effect, but it has. On taking it out of the bath, if it were fairly dense to start with, it will have increased in density on looking through it, and will be of a slate color. If it have only been a ghost of an image at starting the image would almost have disappeared in this bath. Unless there was a certain amount of intensity this is sure to occur.

Well wash the plate and proceed to intensify with pyro. and silver as before. It will be found to increase very rapidly in intensity, and the lines will keep remarkably clear. There is no fear of them blocking

up after a certain amount of intensity is obtained; when it appears difficult to get any more, wash it and place it in the platinum bath as before for about the same time. On looking at it the plate will be found to have gained considerably in intensity and to have become much blacker. After washing it, it can be treated with pyro. and silver again, or as many times as may suffice to produce the requisite amount of density.

One thing must be guarded against, namely, not to force it too much with pyro. and silver; that is, not to allow the pyro. to act on the film after intensity apparently ceases, as it will readily be gained after further treatment with the platinum bath. If this be attended to there is not the slightest fear of the film splitting up or drying. There is one precaution I take to keep the film from washing up, and that is to edge the plate with india-rubber solution.

I must not omit to mention that the platinum bath may be strengthened from a stock solution kept for that purpose. My stock solution is as follows:

Bichloride of platinum, . . 60 grains.
Water, 10 ounces.

Before I discarded wet collodion for field work I found this system exceedingly useful when the light was very dull in winter weather, when, occasionally, I used to get a thin negative.

In reading this many may think it a very roundabout way, but in practice it will not be found so; there is no risk with it. My friend Mr F. A. Bridge has been using it for some time, and is very successful with it. The use of platinum is far better than the old iodide in water to flood the plate with, followed with pyro. and silver. To those who have any line work to do my advice is to try it.—*British Journal of Photography.*

LA GRANGE, GA.

E. & H. T. ANTHONY & Co.

Dear Sirs: Enclosed please find \$2 00 for the BULLETIN. It has been worth several times \$2 00 to me.

Very truly yours, J. L. SCHAUB.

Electric Bells for the Studio and the Reception Room.

RESUMING the subject of electric bells as a convenient adjunct to the speaking tube for keeping the studio and reception room departments apprised of the immediate state of the business in hand, we shall now give some practical hints on their installation and employment.

The necessary apparatus, which is very simple, consists of the bell (the "trembling" bell) the battery, and the commutator (or, as it is commonly termed, the "push") Of course, each of these must be in duplicate if the communication has to be made both ways; that is, if the studio is to communicate with the reception room as well as the reception room with the studio. Many bell-hangers, particularly in large towns, now undertake the fitting up of electric bells; but we shall assume in the present instance that the photographer intends to do the work for himself, and that he has no knowledge of electricity whatever. With regard to the selection of the bells; these may be obtained of various sizes; but, for our present purpose, two inches to two and a half inches will be quite sufficient—indeed, better than if it were larger. The price of these is from five to ten shillings each, according to their quality and where they are purchased. It is always better to secure well made bells in the first instance. Though costing a trifle more, they are less likely to get out of order by continual use.

For the battery nothing is better or so good as the "Leclanche cell," and, for a bell of the diameter mentioned, that known as the pint size will be quite sufficient. The cost of these is about three shillings per cell. They can be purchased ready fitted, and then they only require filling with water, when, after standing for a few hours, they will be in working order, and will continue so for two or three years. One cell will be quite sufficient for each bell, provided the distance it is from the push does not exceed thirty or forty yards. If it does, then a couple of cells for each may be re-

quired, but much will depend upon the conducting wire and its quality. The "pushes" are made of various forms, but the most general are those which are fixed to the wall with a screw.

In addition to these articles, some cotton-covered copper wire is required—sufficient to reach from the push to the bell and battery and back again. Two kinds of this wire are supplied, one being "single covered" and the other "double covered." The latter is to be preferred. With regard to its thickness, that known as "No. 16 Birmingham wire gauge" is the most suitable. Its price, according to the place of purchase, is from one and sixpence to two shillings and sixpence per pound. Single covered is a few pence per pound cheaper. As a guide to the quantity requisite, it may be mentioned that a pound of wire of the above gauge contains about twenty-five yards. Having provided the necessary parts, the fixing is a very simple affair.

In the first place, the base-board of the bell should be securely fastened to the wall by a couple of nails or screws near the top of the room, as from thence it can be better heard from all parts without attracting undue attention. In fixing it is necessary that the bell should be at the top or bottom, so that the clapper occupies a vertical and not a horizontal position. The battery should be placed on a shelf or other convenient place adjacent. Then one pole of it—say the wire coming from the zinc element—must be connected by a short piece of the insulated copper wire, with one of the binding screws on the base-board of the bell.

We now proceed to fix the commutator, or "push"—say in the reception-room. In the first place, the piece holding the ivory stud in position is unscrewed. It will then be seen that there are two metal springs which do not touch each other, unless they are pressed together with the stud. At the side of each of these (close to where they are secured to the wood) is a small hole through which the ends of the conducting wires are to be passed from the back, after they have been filed or beaten flat. The

screws holding the springs are loosened, and the flattened ends of the wires inserted beneath them. This done the screws are then tightened again, and by this means the wires will be held firmly and good metallic contact secured. It is a good plan to make the connections between the wires and springs by soldering, though the above plan will answer nearly as well. Care must be taken that there be no metallic contact whatever between the springs until they are pressed together with the stud. Having made these connections good, the push is secured to the wall in the place most convenient. All that now remains is to lead one wire to the vacant binding screw on the base board of the bell in the studio, and the other to that of the battery adjacent.

The whole is then complete, and it will be noticed, if all be arranged correctly, that, starting from the push, there is a continuous metallic circuit from it to the battery, thence by the short wire to the bell-coil, and through it back to the push. Here the circuit is interrupted, unless the stud be pressed, when it is completed and the current circulates, ringing the bell, and continues to do so until the stud is liberated. If two cells be used in the battery, the zinc of one is connected with the carbon of the other, and the two free ends treated as if the compound battery were a single cell. Before making the connections the ends of the wires should be made bright with a piece of emery cloth. When a bell is fitted both in the studio and the reception room, a single wire (which need not be insulated) will answer for the return current; or, indeed, a couple of wires only may be made to serve for both bells. But it requires some little knowledge in electricity to make them available; hence the novice in electrical bell-fitting cannot do better than employ distinct conductors for each bell, as described above. At the base of the clapper-spring of most bells is a small set screw for regulating the rapidity of the stroke. It may be so adjusted that the clapper strikes the bell slowly, or so rapidly that the ringing sounds as a continuous

musical note. The latter is the way it should be set for the present purpose.

The bells being fixed, a code of signals must be arranged as we explained last week, namely, by rings of a short or long duration. In arranging the code it is better, in practice, to confine ourselves to two periods of ringing only—one as short as possible, such as is produced by an instantaneous touch, and the other of longer duration, as by pressing the stud, for (say) a third or half of a second. Then the code can be represented on paper as a simple dot (·) and a dash (—). A copy of the code should be affixed in the vicinity of the pushes, until the communicants have committed it to memory, which can be accomplished in a very short time.

Appended is an example of a few sentences and questions as frequently employed in a photographic business, arranged with the simplest combinations from the Morse code. These will serve to illustrate how a code may be framed to suit special requirements:

- — A sitter arrived by appointment
- · — “ “ without “
- Studio disengaged now; send up next sitter.
- · · How long before the studio will be disengaged?
- · Five minutes.
- · · Ten “
- · · · Fifteen “
- — A lady now in the dressing room.
- — — A gentleman “ “
- · · — Have you many sitters waiting?
- · · — Are any appointments due?
- · · — Sitter has arrived in a great hurry.
- · · — Communicate through the speaking tube when you are disengaged.
- — — The light is now very indifferent.
- · · · Repeat last signal—it was not understood.
- — Yes!
- · — No!

The above few examples will serve to show that an almost endless number of questions may be readily put, and answers

given, by means of a few touches of the commutator.—*British Journal of Photography*.

[We shall have these electric bells for sale.
—EDITOR.]

Amateur Photography.

THE recent exhibition of the Boston Society of Amateur Photographers which was held in Boston was so successful as to make it probable that similar exhibitions will be held in different parts of the country. It was very properly divided into two classes, the first of which was for work wholly performed by amateurs; the second class allowed the printing and toning to be done by professionals. The exhibits, which were from various parts of the country, were some six hundred in number, and the subjects embraced almost everything which can be photographed.

One gratifying fact to those who wish to see amateur photography carried to as great perfection as possible was that the majority of the exhibits came under the first or Class A. The judges were selected evidently with an eye to the artistic as well as photographic excellence of the specimens shown. The Committee consisted of Mr. B. Coolidge, both a photographer and artist, Mr. C. A. Walker, a designer on wood, and F. W. Chandler, the architect.

It would certainly be out of place to make mention of particular entries outside of those for which premiums were awarded, but the great merit of some of them tempts us to do so. The prizes were in the form of certificates, which were issued to the exhibitors. The following is a list of the fortunate competitors:

Class A. Diploma for best print to J. M. Jordan, M. D., Philadelphia, Pa.; scene on Blue Creek, Va. Second award of honorable mention to Mrs. John A. Thurston, Cambridge, Mass.; photograph of interior.

Class B.—Diploma for best print, to W. B. Luce, Boston; view of residence in North Easton. Second award of honorable mention to Theodore Dunham, Harvard Col-

lege, Cambridge; photographic collection of bric-a-brac.

The judges called attention to several others, that were considered worthy of special mention, as follows:

In Class A.—For greatest excellence in composition, Miss Nina M. Sumner, of New Bedford; sunset view, with poplar tree. For best figure, D. J. Cartwright, Revere, Mass.; full-length portrait of a lady.

In Class B.—For general excellence in posing, Edward Cohn, Philadelphia, Pa.; photograph of girl holding cat. For best interior, Mrs. Walter Burgess, Boston; best group of animals, A. W. Cutting, Wayland, Mass.; a group of cattle.

These exhibitions are particularly valuable to amateurs in showing at once their own possibilities and limitations. With only professional work as a standard, the amateur is prone to neglect those things at which he is likely to be most successful, and to forget or overlook avenues for his efforts which are more promising and profitable than those of the professional.

Premiums.

ANY photographer who may forward us a subscription (in addition to his own) for the BULLETIN for 1884 will receive a premium, (until the edition is exhausted), as follows:

1. A copy of the *Art and Practice of Silver Printing*, by Capt. W. de W. Abney and Mr. H. P. Robinson; or

2. A copy of *Modern Dry Plates, or Emulsion Photography*, by Dr. J. M. Eder; or

3. A copy of *The Studios of Europe*, by H. Baden Pritchard; or

4. A copy of *About Photography and Photographers*, by H. Baden Pritchard. Of these either the pocket edition or the 12mo, should any one prefer the latter.

Two additional subscriptions will entitle the sender to two copies of the above; three additional to three, and so on.

We hope this may be an inducement to some of our enterprising friends.

Ferrous Oxalate Development.

To the Editors.

GENTLEMEN,—In your last issue there are two (to me) very interesting papers, both treating of oxalate developing—one by Mr. Norman Macbeth, R.S.A., and the other by Mr. A. Goodall. I will, with your permission, make a few remarks on them, more especially on the one on *A Ferrous Oxalate Developer*, by Mr. Macbeth.

I am one of the few professional artists who use oxalate developing entirely. I have, I hope, forever discarded pyro. The very name is obnoxious to my ear.

Mr. Macbeth gives a very good method, but, judging from his own words—"I do not think it suitable for the professional photographer when time is a consideration," etc., Mr. Macbeth does not give encouragement for its use by the latter class. He then goes on to say: "Having two or three baths, he can easily get through half a dozen plates in an evening." Of course this rate of proceeding would not suit a professional photographer. But I will now try and supplement his most useful paper by giving the method I have used for a considerable time, and, in fact, I do all my work by it.

We will start with the developer (Audra's) as given by Mr. Macbeth; but, instead of using upright baths, I use flat tin trays covered with Brunswick black. A very useful size is large enough for two whole plates, or four half plates, or nine quarter plates. I always place the plates in *old developer*—that is, the developer I used for the previous lot of plates. After a few minutes they should be well out, but scarcely thick enough for bright printing. I now have another dish ready with (say) enough *new* developer to cover a half plate or two quarter plates. (Of course, if I am using larger plates I must have a larger dish, etc.) I now take the plate or plates from the old developer and place them in the fresh. Very soon they acquire the requisite density, and must be removed at once, washed under the tap, and placed in a dish of strong alum, remaining there some little time. I use a

dish large enough to hold several plates. I then take them out of the alum, wash carefully, and put into a vessel of clean water, there to remain till the whole are 'through and ready for the fixing. When all the plates are developed I pour the new developer into the bottle first, and then the old. When the bottle is full, of course there will be a surplus every time, and if not wanted it can be poured away. The bottle is then placed in a position where the sun, when shining, can reach it.

By this method I claim that I can develop with (say) a one and a half pint bottle. I use at least twenty or thirty quarter plates, and only have to use about three ounces of new solution, costing much less than pyro.—not only producing as good, but to an artist much better, work, giving every shade from the highest to the lowest.

Again, it possesses another advantage: the solution is always ready. I do not want to filter; it settles beautifully clear in the course of a day and night. All I have to do is to pour out what quantity I require and put my plates into it, and they will take care of themselves, within reasonable limits.

I think I have made out a clear case of the great advantages arising from using this method; but it will require a great amount of writing to make any but the few who have had courage enough to try it thoroughly believe it can be good. I see page after page of the photographic journals devoted to pyro, but it is a rare treat to me to find anything good said of the poor oxalate. I simply let the papers on pyro. be "taken as read," and go on to the next article. What I want to see is a thorough trial, by first-rate men, of poor snubbed oxalate.

I think this supplement to Mr. Macbeth's paper will give many a chance of using perhaps the very best developer there is known for gelatine plates—certainly the least expensive, and as certainly the cleanest.

I have only a few remarks to make on Mr. Goodall's paper, and these more of the nature of questions than anything else. I should like to know if the brilliant paper

he mentions is obtainable, and whether it is similar to M. Hutinet's; also whether he has tried developing with a similar developer to the one I use for ordinary negatives. I find this does very well for Morgan's paper. I am, yours, etc.,

O. C. SMITH.

Bridgewater, Nov. 19, 1883.

"El Rayo Solar."

Second Edition.

A TREATISE, theoretical and practical, on photography by Prof. J. Towler, revised and brought down to the present state of the art in all its principal branches, by H. T. Anthony. A new edition with a supplement, D. Appleton & Co. This work is a translation into Spanish or, perhaps, more properly speaking, a translation and extension of Prof. Towler's *Silver Sunbeam*. In going through the work the reader's only regret is, that the last English edition is not so elaborate and complete. Whether we consider the chapters devoted to the wet process or turn to those in which the dry plate process is treated, we find excellent reasons for praising the manner in which the work has been done. Those of our readers familiar with the *Silver Sunbeam* will remember the early chapters are devoted to principles of the collodion process and a discussion of the chemicals used in photography. Although occupying a small space, this part of the work is extremely valuable for reference, to both amateurs and professionals, to the beginner as well as the expert.

The various modifications of the collodion process and the means of producing the different kinds of pictures are given with great fullness of detail. Formulæ are printed for the preparation of all solutions and substances which the photographer is called upon to use or produce. The chapter on silver printing and toning is decidedly satisfactory.

As a manual of the bromo-gelatine process the work is not exceeded in its fullness by any of the special manuals which we

have yet seen, though everything is condensed as much as possible in order to economize space. In fact, all the good features which a manual should have seem to be combined, and all the undesirable ones are conspicuous by their absence.

Illustrations are freely used throughout the work, the chapter on apparatus being especially complete. The principles of solar printing and enlargement, as well as those of micro-photography, are taken up, illustrated and explained.

The subject of emulsion, including both bromo-gelatine and collodions, are treated at length, and directions for making, with the necessary formulæ are given. The directions are exceedingly clear, and a chapter is devoted to the methods of overcoming all the difficulties which the plate-maker is likely to meet. In treating the subject of development the editor has very wisely confined himself to one or two of the best known and most widely useful formulæ for developers. We have only to congratulate our Spanish speaking friends on the possession of one of the most complete and satisfactory works to be found on this subject in any modern language.

Impure Chemicals.

In *Photographic Mosaics* for 1884 we find some remarks by C. J. Billingham, on the subject of photographic chemicals.

The article is a short and suggestive one, but the author mentions only two or three of the most important substances which should be absolutely pure. We are almost tempted to copy the extract complete, but in protesting against the use of impure chemicals we should certainly make our list large enough to include all that the photographer uses. When the difference between the best hypo. in the market and the common crystal is measured by the fraction of a cent per pound, certainly the score of economy need have no influence. On the other hand poor hypo. is a decidedly undesirable chemical for both the amateur and professional. Its offensive odor, its staining effects on dry plates, and the impossibil-

ity of making a brilliant negative with it, should be sufficient reasons for abandoning it in favor of the better sort. Mr. Billinghamurst expresses a preference for collodion which he makes himself, and complains that he finds it difficult to obtain good alcohol for this purpose. It is hardly necessary to take up the question whether it pays to make one's own collodion. We think it has been demonstrated that, save in most exceptional cases, the individual can not make as perfect a preparation as he can purchase. But supposing he wishes to make for himself, he need have no difficulty in getting a perfect alcohol or ether. By specifying precisely what he wants, a stock house having any reputation whatever for honesty can send him brands of chemicals whose purity is beyond peradventure. Granting, however, that he deals with irresponsible houses, he can order such brands as he positively knows are pure and refuse to take any other. Speaking from a somewhat chequered experience, we should include the whole list of chemicals among those we would be glad to have C. P. It is hardly necessary to mention the brands; they have too long had a satisfactory reputation for the amateur to trouble himself in regard to their purity. They are uniform and satisfactory, and that is amply sufficient.

Deutscher Photographen-Kalender.

BY H. SCHWIER, WEIMAR, 1883.

GERMANY possesses a literature of a particular class, which for abundance, completeness, convenience and practical value seems to be unequalled by that of any other nation. We refer to the class of annual hand books, almanacs and calendars of a technical character. Some of these works for special professions, which are issued every year, are as carefully and elaborately prepared as would be expected in a technical pocket book for a professional man. Others are merely intended to be what their names indicate, calendars for the year, with current notes and convenient matter for the profession. The book before us belongs to

the latter class. It contains a calendar for the year, a diary of three or four lines for each day, with a quantity of other matter usually found in diaries.

A table of weights and measures for the conversion of English, French and German into the metric, tables of the elements, alcohol tables, tables of equivalents, with some standard formulæ for collodions, emulsions and developers are given. The portion devoted to receipts, etc., is printed on one side of the leaf, leaving the other side blank for memoranda.

Twenty pages are devoted to various photographic topics, in which the gelatine emulsion process occupies a large space. The remainder of the work, comprising more than one-half of it, is devoted to a directory of photographic associations in every corner of the world.

Judging from the completeness with which societies in the United States are given, this portion of the work is exceedingly well done. A "lichtdruck" by J. B. Obernetter, of Munich, is used for illustration.

MESSRS. BLESSING & BRO. of Galveston Texas, have moved into new quarters as will be seen by the following notice:

TO THE PHOTOGRAPHERS OF TEXAS,

Greeti gs.

Wishing You Health and Prosperity.

CHRISTMAS, 1883.

Having erected a building of our own, for our especial use, we have moved into it. This gives us more storage room, and increases our facilities for handling goods at small profits and with dispatch.

As in the past, our aim shall be to fill all orders promptly, and to the entire satisfaction of our patrons. From long experience we are enabled, in a measure, to anticipate the wants of our customers, and thus be ready to supply them. When an article is not in stock, we take pleasure in procuring it with all possible dispatch. It is gratifying to know that our efforts to serve them have been appreciated by the fraternity to the extent of increasing our trade two-

thirds in volume in the year now closing. Heartily thanking our friends for their liberal patronage, we solicit a continuance, and from those who have not dealt with us, a trial, Very respectfully,

BLESSING & BRO.

FROM the (Galveston) *Texas Republican*, of Dec. 22 we learn that a Mr. L. Lilienthal has opened a large photographic establishment at Nos. 166, 168 and 170 Tremont Street, in that city. From the advertisement, which reads of "New Orleans," we imagined it to be a branch of Mr. Theo. Lilienthal, of the latter city; but on inquiry this proved not to be the case. We trust Mr. L. L. may be as successful, enterprising, and estimable as his worthy *confrère* and namesake of the Crescent City.

A Burglar Outwitted.

THE premises of Mr. H. N. Grenier, whom we have had occasion to allude to as the inventor of a valuable process for photographing on wood, were broken into on Friday evening last and robbed of a 12 x 15 Dallmeyer Rapid Rectilinear Lens, a Novel Camera, etc. Mr. Grenier reported his case to the police, but at once himself assumed the role of detective. On returning to the street he met a man who had been employed to pump water to the upper floors of the building, and his suspicion instantly fell on him. This, however, he perfectly concealed by telling the man the circumstance and requesting him to identify the lens in case of its recovery (which the latter promised to do), at the same time eliciting from the thief his name and address. Quickly afterwards he discovered on the shelf of a prominent pawnbroker the missing instrument, and showing him the case of diaphragms (which the burglar had forgotten), claimed the property by virtue of the agreement of the number with that on the stops. He immediately sought his lodgings, and followed at a short distance in the rear by a detective, called on the culprit to redeem his promise of identification.

The pawnbroker had suspected a theft, and, when the fellow asked him for four

dollars for the instrument on which he would have loaned him fifty, put him off by saying he would inquire about its value and let him know next day, anticipating the arrival of the rightful owner. When Mr. Grenier returned with his charge to the pawnbroker, the latter pronounced the words—"that's the man," and the officer of the law promptly cared for him.

Photographic Prints with Salts of Lead.*

BY MR. EUGENE PERROT.

TAKE ordinary albumenized paper and sensitize as usual upon a concentrated solution of bichromate of potash. The paper is allowed to dry and hung up in the dark room. This dried paper is placed under a negative and exposed from twenty to thirty minutes. After this exposure it is carefully washed in the dark, the image being scarcely visible. The paper is then plunged in a solution of acetate of lead, when the image will appear of a lemon-yellow tint scarcely visible. It is then completely washed again, and all that remains to do is to tone the print. For this purpose place in the open air, in the yard for example, a very dilute solution of sulphuretted hydrogen or of sulphide of ammonia. The print is then placed in this bath. At the end of a few minutes the image appears of a brown color, varying to black, and with a very excellent effect. It is sufficient to wash the print again and it is finished.

It is necessary to make a few observations. The sulphuretted solution should be extremely weak; if it is not, a sort of metallic sulphur of lead appears. The last operation should be in the open air, to avoid in the first place the bad smell and the change it might cause in the articles placed in the work room.

I will say finally that prints can be equally well obtained of a beautiful green, suppressing the salts of lead and replacing the sulphuretted hydrogen by a solution of bisulphite of soda, which fixes the oxide of a chrome green.

*From the *Bulletin* of the French Photographic Society.

[From our Special London Correspondent]

FOREIGN NOTES.

Pleasant Evenings for Photographers.—

Those who organize social gatherings or *conversazioni* for the photographic fraternity would do well to follow the example of the Glasgow Association in providing abundance of scientific apparatus and appliances for the instruction and amusement of their guests. It is long since there has been such a thoroughly successful photographic *conversazione* as that which took place on Tuesday at the Victoria Hall, Glasgow, under the presidency of Mr. Councillor Robertson, the Glasgow manager of the National Telephone Company. Mr. Smelli fitted up two very complete telephone and telegraphic offices, one at each end of the large hall, and the single wire which served to connect the two sets of apparatus was kept constantly at work during the evening. Some of the "latest news" messages were handed over to a clerk who was provided with an electric pan, and printed copies were circulated in a few seconds. The collection of apparatus lent by Mr. White was very extensive; it included a fine Rhumkorf coil, with which several series of vacuum tubes were illuminated. The first pneumatic plate-holder (1852) was shown by Mr. Church, and Mr. Abbot handed round a photographic lens which he himself had made about forty years ago. Among other objects of historical interest may be mentioned a volume of calotypes taken by the late D. O. Hill, in 1844, and still in good preservation; also a complete set of daguerreotype apparatus contributed by the President. Some half dozen of the local and metropolitan stock houses lent representative collections of their latest novelties, and numerous specimens of excellent photographic work adorned the walls of the hall. Mr. Maclear's "grapho-kistoscope," which is a sort of graphoscope provided with distorting lenses made to revolve by clock-work, appeared, however, to give more solid satisfaction to the visitors than any other exhibit. Although Scotch-

men are ordinarily averse to acknowledge that anything amuses them, it was difficult for the gravest to refrain from laughing outright on seeing the remarkable distortions of a portrait when viewed by the "grapho-kistoscope." I would suggest the application of the same principle to the optical lantern.

Gelatino-bromide paper for enlargements and small prints.—British photographers are giving much attention to this subject, and many are turning out very excellent examples. The want of vigor and boldness which has hitherto characterized this class of work is due to the circumstance of the emulsion sinking into the paper; and much improvement has followed a suggestion made by the *Photographic News* to enamel the paper with an emulsion of sulphate of barium before coating it with the sensitive gelatino-bromide. Such an enamel may be readily made, as follows: Dissolve ten ounces of a moderately hard gelatine in sixty ounces of water and divide the solution into two equal parts. In one part dissolve three ounces of crystallized chloride of barium, and in the other portion four ounces of crystallized sulphite of soda is to be dissolved; after which the solutions are mixed and the emulsion is allowed to set. It is now washed just as if it were an ordinary gelatino-bromide emulsion. When washed it is melted and a solution of chrome alum (thirty grains to the ounce) is added until the gelatinous mixture just shows signs of thickening or coagulating, one ounce of the alum solution being generally sufficient. An ounce or two of glacial acetic acid is next added in order to restore the fluid condition of the gelatine and the mixture is ready for coating the paper, but a little smalt blue very finely ground in water or thin jelly may be added to neutralize the slight yellowish tint communicated by the chrome alum. All is now ready for coating the paper—this being floated upon the mixture just as when sheets are albumenized—and the paper is now pinned up to dry. Nothing special need be said as to the emulsion except that it should be rich in silver bromide and not

too sensitive. There are machines by which the coating of the paper with emulsion may be rapidly and effectually performed; but a simple method which does not involve the use of a machine is more likely to prove useful to your readers, and the following simple and effectual method originates in the same quarter as the suggestion to use a barium substratum. Four wooden laths—let us suppose half an inch square—are fastened together at the corners so as to make a rectangular frame of which the outside corresponds with the size of the sheets to be coated. The frame having been laid on a slab of glass, the slightly dampened sheet is turned up at the edges and placed inside the frame so as to form a kind of dish, and a good quantity of emulsion is poured in; after which the excess is drained at one corner and the slab is allowed to remain in a horizontal position until the emulsion has set. Of course many frames and slabs of glass will be required if much work is to be done, and it is well to thin off the corner of the frame by which the excess of emulsion is drained.

For ordinary contact printing nothing is more convenient than gaslight, while a lantern of the sciopticon pattern will answer well for enlarging. In developing, either ferrous oxalate or pyrogallie acid may be employed, but in either case a little citrate of potash should be added—a few grains to each ounce of developer. Fixation in the usual hypo bath. Small work is improved by being enamelled with collodion like a Lambertype print. A glass plate is waxed, coated with collodion, and soaked out in water, when the washed print is squeegeed down on the collodion film, and when dry it is stripped off the glass.

Reduction of metallic compounds by gases and vapors.—Dr. George Gore, of Birmingham, who is well known as a scientific investigator, finds that coal gas exercises a powerful reducing action upon salts of the precious metals. A solution of gold chloride or silver nitrate, in which a platinum wire is partly immersed, deposits very beautiful pellicles of silver or gold when exposed

to the action of coal gas; much of the metal ultimately gathering round the platinum wire. Carbon printers and collotypers have long recognized the fact that coal gas reduces the bichromate and causes insolubility, and Dr. Gore's results indicate the need of care in protecting silver compounds and sensitive surfaces from coal gas or the products of its partial combustion.

Practical information about lenses.—The photographer usually takes but little interest in the complex formulae by which mathematicians demonstrate optical truths, and photographic journals often contain rather an excess of the theoretical as regards optics.

Mr. Baden Pritchard, who has been occupying himself of late with the practical side of photographic lenses, has given me a copy of some remarks which he is shortly going to print, and which I am fortunate in being able thus early to put before your readers.

Some photographers are in possession of a whole battery of lenses; others manage to do a vast amount of work with three or four. Now for the sake of argument we will suppose our photographer has half a dozen. They are of various kinds and have different names; but beyond knowing that he usually employs this one for carte pictures, that for out-door work, a third for copying, etc., he knows little definitely about them, and his assistant probably less.

Now a straightforward way of comparing the capacities of lenses in a practical fashion is to adopt some common object, say a two-foot rule, and to look at this on the focusing glass of your camera at a medium distance, say twelve feet from the lens. You have then always a measure of the capacity of a lens in your eye. My No. 1 lens, you will say to yourself, makes the two-foot rule, at a distance of twelve feet, appear exactly $5\frac{1}{2}$ inches long, while my No. 3 lens shows an image of $3\frac{3}{8}$ inches, and my No. 7 gives an image of but 1 inch. To make matters quite clear you try all your lenses, and note the results on a card, thus:

COMPARISON OF LENSES.

Size of a two-foot object at 12 feet.

No. 1. — Copying lens (focal length $26\frac{1}{2}$ inches), . . .	$5\frac{1}{2}$ inches.
No. 2. — View lens (focal length $20\frac{1}{2}$ inches), . . .	4 “
No. 3. — Portrait lens (focal length $17\frac{3}{4}$ inches), . . .	$3\frac{3}{8}$ “
No. 4. — Portrait lens (focal length 12 inches), . . .	$2\frac{2}{16}$ “
No. 5. — Wide angle, view (focal length 7 inches), . . .	$1\frac{5}{16}$ “
No. 6. — Portrait lens (focal length 6 inches), . . .	$1\frac{1}{16}$ “
No. 7. — View (focal length 6 inches),	1 “

Two or three copies of this card are made and put up in the studio, work-room, and elsewhere, where it is in view of every one in the establishment. In this way, a practical acquaintance with the lenses is soon made, and when some picture has to be taken beyond (say) the ordinary carte portrait, the photographer, whether he is principal or assistant, has in his mind what lens is most likely to fulfill the conditions required. He has but two factors to bear in mind—the two-foot rule and the distance of twelve feet—and he can at once give a good guess which of his lenses to screw into the camera forthwith.

Of course, there are the peculiarities of the portrait lens and the landscape lens to be taken into consideration; the distinctions here are not so marked as they used to be before the days of gelatine. The outdoor photographer, who has many lenses, employs that which embraces the view he wants, and is of longest focus, that is to say, if he desires the largest picture he can get. But sometimes space is limited for the camera—he cannot get back far enough—and then he must needs employ his short focus instrument, and put up with abnormal effects in the foreground. At the same time it is well to bear in mind that the rule to employ as long a focus lens as possible has exceptions, and a very important one came under our notice the other day. A chnical dispute arose as to the abrasion

of a metal surface; it was so slight that to the uneducated eye the abrasion could not be distinguished from ordinary tool markings, and a photograph, taken with a long-focus lens, to get the image as big as possible, scarcely assisted the disputants. But when a short-focus lens was employed, the sweep of the abrasion was concentrated, and a smaller, but much more sharply defined image of the defect was at once produced.

A practical experiment touching the focus of lenses will also impress upon the mind of the photographer a fact otherwise not sufficiently appreciated. If a map or plan has to be reproduced, to take an example, the photographer, naturally enough, takes out his copying lens to do the work. He stretches the map upon a flat drawing-board, gets his camera level, and focusses. Now he is usually enjoined not to focus the lens on the very centre of the map, nor the outermost margin, but at a spot midway between these; in other words, if the map has a diameter of four feet, he is to focus one foot from the central point. This is the advice, we say, generally given in hand-books and manuals. Now a simple experiment will demonstrate the falsity of this, and he will ever after bear in mind the lesson taught him.

Let him take his No. 1 lens with its $26\frac{1}{2}$ focus, and at a distance of (say) twelve feet, set up a dozen slips of card, each of them half an inch apart. A deal board with cross cuts half sawn through will do to stick the cards in one behind the other, each succeeding card being a little higher, so that all are seen from the front. The cards are one and all marked with a fine cross in Indian ink and a consecutive number, the card nearest the lens bearing the figure 1. The focus is accurately adjusted, we will say, on No. 6, and a picture is taken. What is the result? Why? what any photographer at a moment's thought would have foreseen. The cards 5 and 4 are tolerably in focus, to judge by the Indian ink crosses, but 3, 2 and 1 are altogether blurred; on the other hand, not only are 7 and 8 in tolerable focus, but so are 9 and 10.

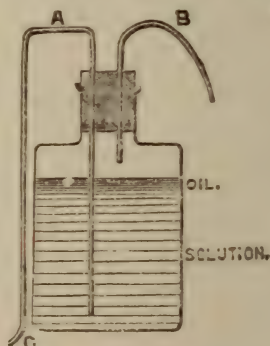
In short, at this distance—12 feet—our copying lens may be said to blur an inch in front of the focus and about two inches behind the focus, the latter intervals varying, of course, with the distance of the lens from the object.

Now there is nothing new in this. Every one, as we have said, who has considered the subject, would say the result was exactly what he had expected. And yet the general advice given in copying a map or plan has always been to focus half way between the center and margin; in other words, to throw half the object in front of the focus and half of it beyond. This, under any circumstances, cannot be right, and the photographer who once will practically make the experiment we have suggested will never fall into the error. He will know that one-third before and two-thirds beyond the focus is generally much nearer the mark; and having learnt this lesson, he will find it to be a valuable one almost every day of his life.

In what way one lens varies from another lens may be made evident to the meanest capacity by simply photographing a diagram through a transparent scale. This transparent scale may be produced upon a glass plate covered with matt varnish, or a film of albumen, and consists of a series of true squares and true circles one inside the other, etc. The scale is produced either by means of a pencil and ordinary drawing instruments, or by transferring from lithographic paper to the glass by the aid of transfer ink. This scale is put into a dark slide and used as a focussing glass, in the first instance, the object to be photographed being a large diagram similarly marked with a series of true circles and true squares, only larger, easily produced by any one in the possession of a set of drawing instruments. One of the squares or circles of the diagram is made to coincide—as well as may be—with one upon the scale, and then a sensitive film is adjusted immediately behind the transparent scale, and a photograph taken. The resulting image will be naturally “out of drawing;” that is to say, the square photographed through the lens will

not tally with the square photographed by contact. The latter image will be true; the former more or less distorted; and any one wishing to test two lenses for distortion has here set before him a plain unvarnished story that cannot fail to be appreciated. If he wishes to know in what way a portrait lens differs from a view lens, or how far he can trust his wide-angle instrument, he has but to secure a photograph of his standard diagram through his standard scale to find out. It is well for the photographer to keep by him a scale result from each lens—taken at a given distance—which will aid as much as the other card we have mentioned in keeping him acquainted with the capacities of his lenses; while the fact of his having made a practical experiment is more likely to fix the knowledge in his mind than all the reading in the world.

A safe for preserving the iron developer.
—M. Sterk has lately called the attention of the members of the Nantes Photographic Society to a convenient form of store-bottle for the iron developer—whether for wet plate or the dry process. As the *Photographic News* says, it is indeed no novelty, for Mr. Warnerke has devised a similar arrangement, but it has proved of practical utility. The iron developer is put into the



bottle together with a little oil; the latter floats upon the iron solution, and preserves it from the oxidizing action of the air. If you blow into the rubber tube, B, the iron solution rises in the bent glass tube, A, and finds an exit at C. A slight inspiration at B at once stops the flow of the solution

when enough has been withdrawn. A solution of iron will keep good for months in this way. The convenience of being able to prepare a good stock of the oxalate developer will be apparent to all, and if the tubes, B and C, be sufficiently prolonged the store-bottle may be placed on a shelf quite out of the way. Another advantage of the arrangement consists in the circumstance that any deposit which may form in the solution is not disturbed, especially if the inside extremity of the tube, C, is bent at right angles. The last bend should be made *after* the tube has been fitted to the cork; an india rubber cork is best. Thin canes of glass tubing may be softened for bending by being held in a gas flame.

Light for the dark room.—Mr. Debenham's plea for a better light in the dark room has brought about much discussion and experiment. Mr. Starnes finds that he can work safely and comfortably by reflected yellow light, and he employs a colza oil lamp enclosed in a box of which the back is painted with sienna; a metal reflector throwing the light of the lamp on the painted back, which then becomes the immediate source of the light for working. Even when there was sufficient light thrown off from the yellow surface to render it possible to read small print a plate exposed under a negative received no impression.

The exhibition at Bristol.—Nearly a thousand exhibits were shown at the recent photographic exhibition of the Bristol Amateur Society, and one may fairly attribute the success which attended the undertaking to the indefatigable energy of Mr. H. A. H. Daniel, the Secretary. Mr. Adam Distin's admirable and charming little compositions of life, character, light and shade well merited the gold medal which was awarded for them. Mr. Distin represents the Dutch school in photography, his photographs recalling to mind the paintings of Gerard Dow and Jan Steen.

Silver Progress Medal of the Photographic Society of Great Britain.—The council have concluded to award this medal to Dr. Eder in consideration of his scientific investigations bearing upon photography.

T. C. Roche on Transparencies.

At the meeting of the Photographic Section of the American Institute in December last I explained the mode of working and practical use by demonstration of the carbon process, for the making of transparencies. My efforts were intended not so much for expert photographers as for the benefit of our younger friends and amateurs, who *learn more by seeing a thing actually done before them* than by all the theories that can be written. (See ANTHONY'S BULLETIN for December, 1883). After the process had been fully discussed, a new, or so-called modern mode of making transparencies was introduced and the results shown. It was mutually agreed and understood, as given out by the President of the meeting and published in the photographic journals, that those results would be shown and compared at the ensuing meeting in January by the aid of a first-class optical lantern, and all were freely invited to bring lantern slides for said exhibition, *no matter how they were made*.

At the meeting of January the 9th a new and fine optical lantern with the oxy-hydrogen calcium light was provided—all that was required to test or project anything photographic on the screen—superintended by Prof. Laudy (an expert); but I must confess I and a good many others were disappointed by the meagreness of the show and the inferiority of the work, with a few notable exceptions, of the subjects exhibited on the screen. Some of these pictures were not originally sharp—glaring imperfections, such as spots, dimness or fog; and those made by the new or “modern” way at the previous meeting, for which this exhibition was called, were for some reason *non est*, and not shown.

The first transparencies I exhibited were made by the ordinary wet collodion process, and after fixing and washing they were toned with a weak solution of sulphuret of potassium.

The second exhibit consisted of the carbon pictures I exhibited at the previous meeting.

The third were made on Anthony's collo-dio-bromide emulsion, used wet, developed by the ferrous oxalate developer, and redeveloped or strengthened with acid pyro. and silver before fixing—no toning being required.

Fourth, some of Ferrier's finest French slides on bromo-iodide albumen. These were shown for comparison.

The fifth, which I consider equal to anything that has been or can be made, were on Eastman's NEW TRANSPARENCY DRY PLATES, that will be an article of commerce. These new transparencies are developed by a slight modification of the ferrous-oxalate developer, and require no toning.

Full instructions as to exposure and developing will be furnished with the plates, the size of which will be $3\frac{1}{4} \times 4\frac{1}{4}$ inches. Larger sizes to order.

For these new plates I use the following solution :

Stock No. 1.—Saturated solution of oxalate of potash. Add oxalic acid to make decidedly acid. Filter before use.

Stock No. 2.—Saturated solution of Anthony's pure sulphate of iron, made acid with sulphuric acid.

No. 3.—Water, 1 ounce.
Bromide of potass., 20 grains.
Citric acid, 40 grains.

To use for a 4 x 5 plate take of—

No. 1, 1 ounce.
Add water, $\frac{1}{2}$ "
No. 2, 2 drams.
No. 3, 1 dram.

This developer can be used repeatedly, Over-develops, as the picture will reduce in the fixing. Fix in hypo. 1 ounce, water 8 to 10 ounces. For contact printing in daylight one to two seconds' exposure will be sufficient. Gas or lamplight within 8 or 10 inches will require from 10 to 20 seconds' exposure.

MURRAY, IND., Dec. 25, 1883.

The BULLETIN, I think, surpasses all other publications of its kind.

JOHN H. DUFF.

Importance of Correctly Timing the Subject in the Camera.

BY J. F. COONLEY.

IN looking over the last *British Journal Photographic Almanac*, I was led to remark that a number of its contributors seem to have been to awakened to the fact that one of the great desiderata in making fine photographs is to time the subject correctly in the camera. As this is one of the points I have tried to make prominent in one or two articles previously published, I am naturally interested and glad to find attention directed in that channel. To properly time each subject so that the best and most brilliant effects are obtained is a matter of fine judgment, close calculation and long practice; it is an art in itself almost, and no matter how fine the light and arrangement may seem to the eye, either a few seconds too much or too little will place it among the impossibilities to make a first-class negative from it, or what it might have been if the time had been exactly correct.

This is one of the things every person practicing photography has to learn for himself. There is no formula to work from; each must rely entirely on his own judgment, and if that is at fault (which is very frequently the case), the result will not be all that it might have been. The quality of the light, color of drapery, complexion, accessories, mode of lighting, and numerous other things have to be taken into account, together with all the various changes of light, difference in subject, and other causes constantly arising. And when any person has thoroughly mastered this problem of giving the correct time for each subject, he has a great point gained toward producing the finest work, as I think the great majority of photographs made are improperly timed in the camera. In outdoor photography it is just as necessary to be exact as in any other branch of the business, and no really fine results can be obtained where this is not properly taken into account.

TRY Dermaline for the hands.

Report of the Photographic Section of the Amer. Institute.

NEW YORK, Jan. 9, 1884.

PRESIDENT NEWTON. We are in somewhat uncomfortable quarters to-night on account of some misunderstanding with those who have the letting of these rooms. We came here and found the room usually occupied was engaged, so we had to do the next best thing, and that was to come into this. At our last meeting there was a little disorder on account of some misunderstanding, and I would state that the asking of questions is in order if properly put. When a gentleman is speaking and any one in the audience wants to ask a question, he must rise and get permission of the speaker to put the question, or permission to interrupt him. If the speaker is willing to be interrupted, then the questioner is in order; if not willing, the questioner is out of order. Proceed orderly. The reading of the minutes of last meeting will be dispensed with to-night.

MR. MASON. I have received the December number of ANTHONY'S BULLETIN, and a communication from an English house, somewhat in the form of an advertisement, with relation to lanterns. If any gentleman would like to examine it after the meeting, I shall be happy to show it. Also from the Scovill Mfg Co. the 13th volume of the *Photographic Times*, bound. This Company I think is entitled to a special vote of thanks.*

MR. GARDNER. Mr. Chairman, Ladies and Gentlemen: The Executive Committee furnish as the programme for this evening's entertainment—

The Electric Light Applied to Photography by Dr. P. H. Van der Weyde and Mr. Wm. Kurtz; also an exhibition of lantern slides, contrasting the new and old methods of making transparencies, by Mr. Laudy and others too numerous to mention.

The programme for our next meeting will be an address by Mr. Abraham Bogardus, entitled—

"Thirty-seven Years Behind the Camera."

Mr. Kurtz has also promised to make his appearance at our next meeting with some new feature of photography.

PRESIDENT NEWTON. Those gentlemen who were to have discoursed about electric light in photography are not here; therefore we will proceed to show some lantern slides made by different processes. If there is time afterwards, and Mr. Van der Weyde arrives, we will hear from him also.

DR. EHLMANN. It being uncertain whether Mr. Van der Weyde will be here to-night, and Mr. Kurtz, who is unable to be present, having instructed me to speak for him, I will make a few remarks regarding the electric light, if the President will allow me. I will occupy but a few minutes.

Mr. Kurtz says, it seems to him that lighting by diffused light is the only way to get harmonious pictures, and Mr. Van der Weyde expressed himself as of the same opinion at Mr. Kurtz's gallery. When Mr. Kurtz explained to Mr. Van der Weyde his mode of lighting with a series of lamps, producing a diffused light, Mr. Van der Weyde promised to inform his son in London of Mr. Kurtz's improvement. Dr. Stolze, editor of the *Photographische Wochenblatt*, rehearsing the discussion between Mr. Van der Weyde, Mr. Kurtz and myself in the meeting of this Section says: "We must be sure of one thing. Lighting by electricity has to be done by well established rules. For instance, supposing that a head in a three-quarter position were to be photographed and illuminated by a partly top and partly side light, the effect in illuminating by parallel rays would be the same as by direct sunlight. Consequently the frontal bones, nose, and other elevated parts of the face would throw such distinct shadows that the portrait thereby would not be an acceptable one. If an object of positive rotundity or convexity were photographed, illumination by parallel rays of light would do very well. From this it

* We should have been pleased to have done likewise, but the demand for the BULLETIN was so great that of several numbers there are none left.—THE PUBLISHERS.

follows that diffused light must be used where all positive shadows are to be avoided. Dr. Stolze concludes by saying that Mr. Van der Weyde thinks so himself, for in his closing remarks at the meeting of the Photographic Section, Mr. Van der Weyde says that he had formerly used a polished mirror, but had abandoned that, and now used a reflector with a matt surface. A polished parabolic reflector reflects parallel light only, and a matt surface reflects diffused light.

Mr. EHLMANN exhibited two portrait negatives of President Newton made by electric light and developed with Mr. Newton's mercurial accelerator, and said: I will mention that I do not entirely coincide with Mr. Newton on this point. The mercurial accelerator can be used with any developer. I have used it with potash and the ammoniacal developer; I have made to-day some with hydrokinone, that seems to work equally well. The only drawback the negative appears to have is to lose its apparent intensity and to require much longer time in fixing. While to go further into the chemical action of the developer, it is very difficult to determine the action of mercurial salts, that are so very little known and so very little studied.

Q. What is the time of exposure?

Dr. EHLMANN. The mercurial developer reduces the time of exposure in the proportion of 10 to 7 or 10 to 6. These plates were made by Mr. Farris. Under ordinary circumstances I would give them about ten seconds' exposure; with this accelerator I gave six.

PRESIDENT NEWTON. The remarks of the Doctor in reference to mercury in the developer makes it necessary for me to say a little in regard to its use.

The action of the iodide of mercury depends mainly on the way in which it is used. With the carbonate of soda developer I recommended for convenience an aqueous acid solution of pyrogalllic acid. This solution, after standing a month or two, loses to a great extent its potency, the developing action with this pyro. solution being very slow and lacking energy. To a developer

composed of the soda solution and this acid pyro. solution, the addition of three drops to the ounce of the iodide of mercury, compounded as given to the Section at a previous meeting, increases the developing capacity four or five times, so that an exposure of five seconds will be equivalent to an exposure of twenty-five seconds without the iodide of mercury solution. It will be remembered by those who are familiar with my statements as given to the public from the time of my commencing to experiment in developing dry plates that I discarded the use of pyro. in an alcoholic solution, which up to that time was universally recommended and used. I insisted that much better results could be obtained by putting the pyro. into the developer dry, and have not changed my opinion since. The aqueous solution I recommended was simply a matter of convenience, and I would suggest that no more of that should be made than would be required for two or three days. In a developer used with the pyro. added dry, the iodide of mercury will produce in conjunction therewith very nearly the accelerating power as stated by the Doctor; I think, however, in a greater degree than seems to have been the case in his few experiments.

With the soda developer some have supposed that the yellow stain was a yellow fog, which is not so. The action of the solution produces a yellow color, which is a dye. The gelatine film is dyed by that solution. If you wish to destroy the dyeing property of the developer, it can be done by adding to it a small quantity of an aqueous solution of ammonia-citrate of iron. Make a ten-grain solution. Two drops of that put into the soda solution before adding the pyro., instead of yellow, produces a ruby colored solution, which has no dyeing property on the gelatine film, and affords a very brilliant blue-black negative.

Another interesting and peculiar effect observed in using this citrate of iron solution in the soda developer was the prevention of rapid decomposition of the developer, which is otherwise usually the case, and in consequence three or four negatives

could be developed by the same developer and with equally good results, the only perceptible change being the deepening of the ruby tint. In the fixing solution there should be one grain to the ounce of the ammonia-citrate solution, and the longer it remains the deeper the tint becomes.

In reference to the action of iodide of mercury in the alkaline developer, here are two prints made from two negatives by Mr. E. Bierstadt, on very slow 11 x 14 plates—what is known as the Carbutt B—with a Dallmeyer rapid rectilinear lens of 19 inch focus. It is looking up Broadway from Reade Street. Mr. Bierstadt had tried repeatedly with much more sensitive plates to obtain a view from that point by the ordinary methods, and without success; but with the use of iodide of mercury as recommended he obtained two beautiful negatives on these slow plates, prints from which you have just seen.

Dr. EHLMANN. Mr. President: The action of mercury seems to be little understood.

Q. Were these negatives taken by electric light on the swivel platform?

Dr. EHLMANN. Yes, sir. All were made on the rotating platform and by the electric light in Mr. Kurtz's gallery. Two were developed with Professor Newton's developer, and all the others with the ammoniacal-pyro.

PRESIDENT NEWTON. Professor Laudy will now say something in relation to his mode of making transparencies and give an exhibition of lantern slides.

Prof. LAUDY. Mr. President and Members of the Photographic Section of the American Institute: The position in which I am placed is somewhat embarrassing, and it reminds me of a yacht race in which I was to have taken part some years ago and for which I made great preparation; but on the day of the regatta the wind failed us, and our sails hung limp and useless. The apology I wish to make is for the sheet which hangs so limp. It is a sail without any wind to fill it. It should be quite taut; but that is the best we could do. I am somewhat new in the use of the dry plates,

therefore I do not exhibit my work as a criterion of what dry plates will do. Mr. Carbutt, whom I expected to see here to-night, gave me a negative, and I made a positive of that on an ordinary Eastman plate and on a wet plate.

Mr. MASON. I would like to say that I have a few prints left which were taken on the day of our dinner at Brighton Beach, and if there is any gentleman here who was in the group and has not received a copy, I shall be glad to give him one after the meeting is over.

Mr. ROCHE remarked that the transparencies he would now show were made by several methods—the ordinary wet plate, Anthony's collodio-bromide emulsion, carbon, Ferrier's albumen, and the new Eastman transparency plate; the latter gave results equal to the finest, further particulars of which would be published in ANTHONY'S BULLETIN for January.

Professor Laudy, Mr. Roche, Mr. Newton, Mr. Seavey and Mr. Mason exhibited slides.

Mr. SEAVEY. I am an amateur in lantern slides. These pictures are taken in various parts of the country and on my travels in search of the picturesque. They are reduced from 8 x 10, 6½ x 8½, and 5 x 8 negatives. Some of them had been intensified, so that in making the exposure I gave all the way from seven to twenty-five or thirty seconds. I made the slides by putting the negatives in the end of a box pointed toward the skylight. I covered the negatives with architects' white tracing paper, making fifteen to twenty exposures. I prepared the oxalate developer of a strength to suit the different negatives, and I used a large tray, putting one negative in and then another until I had filled it. I printed them quite rapidly, have developed by the pyro. and tried the experiment by toning with gold, which gave very nice effects. As to the possibility of making negatives or transparencies by contact, and making them direct, I am not competent to decide; mine were made by contact, and are as sharp as the negative I used. I had intended to bring the apparatus I have for making neg-

atives. I make them 5 x 8 or 8 x 10, and have made 1,000 or 1,400 of them since last August.

Prof. LAUDY. This lantern has been designed by Mr. Bessler, and has several adjustments which make it quite valuable.

Q. Will somebody please tell me what a polyopticon is?

Prof. LAUDY. It is nothing more nor less than a reflecting magic lantern.

A gentleman from Paterson: I am not a photographer; I am an electrician. I have some views here that were taken last winter in Paterson, in the street, by the electric light at night. There are two or three peculiar things I have noticed about them. One is where the light is directly in the field of view there is a halo around it. I should be very much pleased indeed if any gentleman would tell me the cause. There is one, a stereoscopic view, in which the light is shown very plainly.

Mr. MASON. I think it would appear to most photographers who are accustomed to work with a strong light, and to photograph interiors of buildings, or where there is bright polished metal, that these things have contributed to the reflection of the light on the back of the plate. I do not know that a perfect remedy has ever been suggested.*

Mr. GARDNER. I would suggest that a vote of thanks be given to Prof. Laudy and others for the entertainment this evening. The motion was carried.

The PRESIDENT. Mr. Edgeworth is present here from St. Louis. We should be pleased to hear from him, if he has any remarks to make.

Mr. J. F. EDGEWORTH. I was invited here to-night by our friend Mr. Roche. I am a member of the Chicago Photographic Society, and I also represent Mr. Cramer, of St. Louis. I could not help making a few remarks in regard to the use of dry plates in New York. I came here in the interest of dry plate photography, and I

found several very skeptical in regard to dry plates. Now I think they are used by all the leading galleries. I find a great many here use colored screens. I prefer clear white reflectors. Dry plates require more uniform lighting than wet plates, in order to prevent harshness in the resulting negative.

Mr. MASON. At our last meeting some pictures were passed through the audience, and something happened to them that has never happened before—they failed to come back. We hope this will not happen again, for when a gentleman is kind enough to show his work it is only right to return it to him.

Adjourned.

Association of Operative Photographers of New York.

No. 392 BOWERY,
NEW YORK, Jan. 2, 1884.

PRES. CHAS. SCHMIDNER in the chair.

The usual number of foreign and domestic journals were received with thanks.

The SECRETARY announced that Mr F. C. Beach, the superintendent of the photographic department of the *Scientific American*, had volunteered to come before the Association at the February discussion meeting and exhibit there an enlarging camera of his own construction, and to give other instructions and demonstrations pertaining to reproductions and enlargements. He moved, therefore, that the discussion now in order be postponed till next meeting.

The SECRETARY was instructed to issue invitations for the occasion.

Only a small number of members being present no regular discussion was held; a few of them, however, conversed freely on several interesting topics, viz.:

The Use of Foggy Plates.—It was said that a photographer of this city is now using very successfully a kind of plates which some time ago had been refused by many as proving too foggy to give good results.

These plates are well known to one of the members, he having tried them with several developers, all showing the same foggy effects; and he supposed that all of

* The cause of this is known to proceed from reflections from the back of the glass. The remedy is to place a piece of carbon tissue or other dark material which absorbs light at the back.—EDITOR.

them had been exposed to light while being packed, well knowing the ability of the manufacturer to make a faultless emulsion. He now thinks, however, that these same plates giving good results might probably have been treated with a bichromate, which would destroy the fog but decrease their sensitiveness.

Independent of emulsion fog, or when caused by light, a gray fog, although different in appearance, is caused by a long continued development. A similar fog has occurred with collodion plates and with the daguerreotype, caused by an undue reduction of metallic silver on the one and by the deposit of superfluous mercury on the other, which shows distinctly in the shape of very minute globules in the shadowed parts, sometimes even over the whole plate. On wet collodion such depo it is all over the plate, and if not albumenized, will cause the film to crack and peel off.

In regard to green fog, the investigations of Abney, Woods, and Vogel have proved that it occurs when alkalinity prevails, and that the fog itself is finely divided metallic silver.

Newton's mercurial accelerator had been experimented with by several of the members. One renounces the use of mercury altogether. Another has found the results as described by Newton. The experiments of still another operator justify the opinion that by Newton's method a reduction of time of exposure in the proportion of 10 : 7 is a fact. It is not absolutely necessary to use it with the soda developer, as the same effects can be obtained with ammoniacal pyro., or Stolze's potassium developer.

The negatives fix rather slowly, and by fixing a great deal of the apparent intensity is lost. The finished negative does not look as well, clear and crisp as when made by the ordinary process, but has good printing qualities. The process is altogether too new to pass decided judgment on, especially when we consider that the reaction of the salts and double salts of mercury in photographic processes are but little understood.

A formula for the preparation of eau de avelle was given :

Dry chloride of lime,	2 ounces.
Carbonate of potass.	4 "
Water,	40 "

Thin the chloride of lime with 30 ounces of the water ; dissolve the carbonate of potass. in the remainder ; mix, boil and filter.

Frill has occurred to one recently.

How that could occur in the low temperature of this season, and with our present faultless plates, appeared enigmatical to some. It was suggested that, probably, the plates used had been cut into smaller sizes, when the cut edge shows a tendency of the film to separate from the glass. Eder recommends to cut an emulsion plate on the coated side and with a steel glass cutter, not with a diamond.

A good remedy for frill is an addition of a saturated solution of sulphate of magnesia to the developer, and, after fixing, the addition of a few drops of per-chloride of iron to the first washing water.

Several formulas were spoken of, after which the meeting adjourned.

CHAS. EHLMANN, *Sec'y.*

Association of Operative Photographers.

IN my report of our last meeting, I gave to all the journals identical copies of the proceedings of our Association. I am sorry to see that the *Philadelphia Photographer* has mutilated my report in a very essential particular. The gentleman who was the main factor in that meeting is Mr. T. C. Roche, the photographer of the firm of E. & H. T. Anthony & Co., well known among all the photographers of America, from the most northern latitudes to Cape Horn.

No Mr. Rocher and no Mr. Roder was among us ; only plain Mr. Roche.

CHAS. EHLMANN, *Sec'y.*

A Bad Business.

THREE persons have been found guilty in Philadelphia of publishing obscene photographs, and have been fined \$500 each, and sentenced to imprisonment for twelve months.

Pioneer Amateur Club.

AT the regular meeting, January 8th, the subjects for discussion and demonstration were photographing through the microscope and intensifying with bichloride of mercury.

Mr ATKINSON, in demonstrating his way of photographing through the microscope, placed on the table a small kerosene lamp, and in front of the lamp a condenser; then the microscope in a horizontal position, with a slide adjusted and focussed; then the camera with the lens removed and the eye-piece of the microscope passed through the collar of the lens and front of the camera, which was made light-tight by fitting a piece of cardboard close on the eye-piece. Wales' 2.3 and 1.5 objectives were used, the former showing a picture on the ground glass of the camera three inches in diameter of the tip of a blow-fly's tongue, clear and sharp, and the 1.5 objective making a picture of a small section of the tip of the tongue, of the same diameter, showing the finer hairs and the rings in the spirals, which were not perceptible under the weaker power.

Dr. HOAGLAND inquired which was the most preferable light, artificial or sunlight, and what exposure was necessary for so weak a light as the one in use.

Mr. ATKINSON replied that he much preferred an artificial light; it was always the same and he was better able to tell what the exposure ought to be; and besides it required no clock-work, or complicated machinery, to keep the microscopic slide properly illuminated. If he could produce satisfactory results with simple means, why employ a lot of appendages difficult to use, confusing and expensive? The exposure necessary with such a light as that on the table Mr. A. said would be fifteen minutes, and he showed a negative made with Wales' 1.5 objective by that length of exposure which was all that could be desired.

Dr. HOAGLAND remarked that fifteen minutes was a long exposure if it was necessary to do much of such work at one time.

Mr. ATKINSON did not think that a strong light was suitable for an amateur

working microphotography; he would rather make one negative and have it satisfactory, if he had to give two hours' exposure, than make one dozen in the same time with a stronger light and not have as good a result. His best success had been obtained by a weak light with a magic lantern and a long exposure.

Dr. HOAGLAND asked if there was a substitute for the ground glass, as the best that could be procured was too coarse to get a sharp focus when using the microscope.

Mr. RIPLEY said that by exposing a bromo-gelatine plate to light for one second, and then developing it, that a very excellent focussing glass could be obtained for outdoor work. What the result might be with the microscope he was unable to say.

Mr. ATKINSON thought that a good substitute for ground glass could be made by flowing a clean plate with a thin solution of starch. He had heard it highly recommended, but had never tried it.

Mr RIPLEY said that he had brought two negatives which he wished to have intensified. One was over-exposed and the other was under-exposed, and what formula would be the best to use?

Mr. ATKINSON thought that, under the circumstances, Edwards' formula, as given in the *Almanac* of 1882, would be most suitable.

Bichloride of mercury,	. 100 grains.
Bromide of potass.,	. 45 "
Water,	. . . . . 12 ounces.

Wash well.

Aqua ammonia,	. . . . . 6 drams.
Water,	. . . . . 12 ounces.

The best result was obtained with the under-exposed negative, the intensification bringing out detail that was scarcely perceptible before. The over-exposed negative was over-developed as well, which is very often the case with such subjects, and the insensifier only made bad worse.

Mr. HILL wished to know if a bromo-gelatine transparency was as permanent as a carbon.

Mr. ATKINSON showed two 8 x 10 transparencies, one a carbon which had been

made four years, and the other a bromo-gelatin which had been made eighteen months. In the latter decided indications of fading were perceptible, while the carbon was as strong and vigorous as when first printed. Both transparencies had been constantly exposed to the sun.

The meeting then adjourned until Tuesday, January 22.

Rochester Photographic Association.

MONDAY EVEN'G. Dec. 31, 1883.

PRESIDENT J. M. FOX in the chair.

The minutes of previous meeting were read and approved. After some routine business the Secretary read a communication from Edward L. Wilson, of the *Philadelphia Photographer*, extending best wishes for the welfare of the Association, and a telegram from the Messrs. Anthony of the BULLETIN, offering congratulations and compliments of the season to the new R. P. A. were ordered filed, and Messrs. Anthony and Wilson thanked for their courtesy.

In the question-box were the following:

1st. What is the cause of woolliness in albumenized paper prints, and what the preventative?

2nd. What is the best way to keep mounted prints previous to burnishing?

3rd. What office does gold perform in the toning bath?

4th. What is the cause of greenish fog in dry plates and what is the remedy?

Mr. S. D. WARDLAW, chairman of the question-box committee appointed at the previous meeting, said: The questions to be answered were received so late that the committee had no time to properly consider the subjects, which was to be regretted, as the topics were of vital interest. In regard to the first Mr. W. said, although he had not at this time given any study to the question, still it had at times been brought very forcibly to his notice and had caused him considerable trouble. Woolliness, he said, was of two kinds—one where the fibre of the paper showed through the albumen.

This kind is more noticeable in albumenized Saxe paper, especially if it has been albumenized some time, and is caused by the albumen sinking into the paper. This kind of woolliness shows no regularity in its markings, but is distributed all over the sheet.

The other is of a checked appearance. If it is observed closely it will be found to run almost entirely in one direction; that is, if a cabinet print stretches in length the woolliness shows in lines *across* the print; if in width, then lengthwise of the print. If a double albumen print is left unmounted, no matter how long a time, it will always burnish with a good glossy surface; but cut the print in two, mount one-half and let it dry *thoroughly* and burnish both the mounted and unmounted pieces, and you will find the mounted print shows this woolliness, whilst the unmounted piece polishes beautifully. The reason is, the print when mounted was stretched, and whilst wet the soft albumen surface yielded to the stretching of the paper; but, in drying, the paper could not contract with the albumen on account of its adhesion to the mount, hence the "checked" appearance in the *opposite* direction to the stretching of the paper. The albumen which until now was one perfect sheet is torn apart, and as it has been rendered insoluble by the action of the sensitizing bath, no subsequent moistening of the surface can join them again. Dampening the print before burnishing will help considerably, but the woolliness will eventually show. The only preventative is to keep the prints damp until lubricated and burnished. The best way to do this, Mr. W. thought, was to lay the prints face upwards as fast as mounted and rubbed down on the damp cloth of a stretcher—inside the frame of stretcher, of course—making a series of drawers as it were, and piling them, one stretcher on top of the other, as fast as filled, and a flat glass or board on top of all to keep in the moisture.

Mr. FOX. Does paper albumenized on the wrong side show woolliness?

Mr. W. said he had never noticed a case of wool on paper so albumenized.

Mr. F. said neither had he, although he often had paper that was albumenized on the wrong side.

Mr. NELSON said he had used colored blotters to keep his prints in until he was ready to burnish, and had found no injurious effect.

Mr. W's objection to prints being left in blotters was the deleterious matter often contained in them; he had seen samples of white blotters which on being analyzed showed considerable hypo.

Mr. BACON. What is the effect on prints from being left in the blotters?

Mr. W. If the blotters are very damp it will destroy the prints. They will show in places as if strong hypo or weak cyanide had been in contact with them.

Mr. FOX thought a plan that worked well was to pile prints all together after mounting, thus letting them dampen evenly all through. Of course this only answers with plain mounts; enamelled or printed backs would not work.

Mr. POMEROY thought the best plan would be to burnish immediately after mounting.

Mr. STONE thought if the mounting was done in the evening it would make quite a difference whether one worked for himself or not.

Question Second.—Toning. What office does gold perform in the toning bath?

Mr. W. said when an alkali is added to chloride of gold an action is set up which precipitates the gold in solution on the reduced chloride of silver in the print, gradually changing the color of the print from a warm brown to a deep purple, and, if carried farther, a bluish color. The benefit of gold toning is two fold—it gives to the print a more pleasing color after fixing; and, as gold is not so easily acted upon by the elements as silver, therefore it is more permanent. When warm brown tones were fashionable there were more complaints made of faded prints than with the old fashioned black tones.

Mr. POMEROY thought that the new platinum toning ought to be a decided benefit in this direction.

Question Fourth.—What is the cause of green fog in dry plates and what the remedy?

Mr. W. said green fog was undoubtedly something in the chemical construction of the plates, as some plates would show it to an alarming extent, whilst others would only show it on being forced with ammonia. Acid in the developer would prevent it.

Mr. NELSON. What is the objection to green fog?

Mr. W. With green fog in the shadows you ought to make your negatives so much the stronger to counteract the veiling. For instance, a negative that is just right is thin, showing the fine texture of the flesh and draperies, with enough sparkle to make it brilliant; but if green fog is added it becomes so much the flatter. As you cannot eliminate the fog it is necessary to add strength to the negative to preserve the proper balance between the lights and shadows, thereby losing the delicate half-tones and injuring the printing quality of the negative.

Mr. BANNISTEE agreed with Mr. W.

Mr. LEE. What is the objection to acid in the developer?

Mr. W. The less added to a developer the better; besides it keeps back the detail in the shadows, especially if the negative is in the least undertimed.

The PRESIDENT then announced the subjects for discussion at next meeting, Dry Plates vs. Wet Plates.

After balloting for new members and collection of fees and dues, the meeting adjourned.

W. J. LEE, Sec'y.

Dry Plate Manufacturers Meeting at Cleveland.

THE manufacturers of gelatino-bromide dry plates met on January 9th and 10th, in the City of Cleveland, O., for the purpose of taking steps toward the organization of a permanent association.

This was consummated and the following officers were elected:

President, John Carbutt, of Philadelphia.
1st Vice president, G. Cramer, St. Louis.
2nd " C. E. Chase, Chicago.
Sec. and Treas., Geo. Eastman, Rochester

The following manufacturers were present :

G. Cramer, Dry Plate Works, St. Louis, Mo.; C. E. Chase, Chicago Dry Plate Mfg Co., Ill.; John Carbutt, Philadelphia, Pa.; Mr. Taylor, of Taylor & Green, Rockford, Ill.; George Eastman, of the Eastman Dry Plate Co., Rochester; Wm. H. Reid, of the firm of Inglis & Reed, Rochester, N. Y.; J. H. Monroe, of the Monroe Dry Plate Co., Rochester, N. Y.; J. P. Ourdan, Hub Dry Plate Co., Providence, R. I.; and T. H. Wilson, of M. A. Seed Dry Plate Co., St. Louis, Mo.

Aside from the formation of the Association one of the objects was to harmonize the interests of manufacturers, dealers and consumers of the dry plate. The next annual meeting will be held in the same place.

Important Photographic Meetings.

At a meeting of the Massachusetts Photographic Association held at the gallery of Mr. Black, of Boston, on the evening of Wednesday, Jan. 2nd, Mr. T. R. Burnham introduced Mr. David Cooper, who, in behalf of the Eastman Dry Plate Co., invited the Association to meet him on any evening suitable to themselves to witness an exhibition of dry plate work and enjoy a sociable dry plate talk. When it was known that the exhibit referred to was that of Mr. J. H. Kent, of Rochester, N. Y., the invitation was unanimously adopted, and a vote of thanks tendered the Eastman Dry Plate Co. for the opportunity afforded the members of the Association of seeing Mr. K.'s celebrated work. It was ascertained that Monday, January 7th, would be the most convenient evening for all present, and arrangements were made accordingly.

At 7 30 P. M. of that date the Association met as prearranged, at the gallery of Mr. C. F. Conly, 465 Washington Street,

where quite a number of photographers were also found waiting who were not members, but who were attracted by their interest in dry plate matters to be of the party. Mr. C. on behalf of the E. D. P. Co. welcomed the visitors, and called their attention to the exhibit.

On an easel conveniently situated within easy sight of all present the first picture was suddenly and effectively lighted by a line of gas jets arranged behind a reflector, so as to concentrate the illumination on the single object in view.

This was the magnificent and almost life-sized head and bust of Judge Clarkson, of Rochester, and met with the admiration due to its merit. It was a remarkable evidence of what could be done on the dry plate with little assistance from the pencil. The attention of the spectators was called to this fact, and it was commented on. This method of exhibition was adopted with the object of concentrating the interest on one subject at a time, so that the expressions of opinion that were invited could be generally heard and appreciated, and, as expected, proved a perfect success.

In as quick succession as was consistent with thoroughness the pictures passed in review, and numerous were the points of excellence noted and admired; not a single adverse criticism was to be heard, a large majority acknowledging the superiority of the work to anything ever seen before by any process. Many questions of interest were asked and answered, and facts that were instructive learned. In the absence of a stenographic report much that may have been of value to those not present is lost. Among other things Mr. Cooper gave his formula for developing the Eastman plate which he has used with wonderful success in demonstration.

Solution No. 1.

Sulphite of sodium crystals, . . .	$\frac{1}{2}$ lb.
Distilled water,	2 qts.
Pyro.,	2 ozs.

Solution No. 2.

Washing soda,	$\frac{1}{2}$ lb.
Water from tap,	2 qts.

To develop—

No. 1,	2 ounces.
No. 2,	2 “
Water,	2 “

This solution can be used repeatedly. I advise the method of restraining used by Mr. Kent, *i. e.*, adding five drops of a saturated solution of bromide of potassium to each ounce of a separate solution of the same proportions as above, and using two dishes, one for normal solution and the other for restrainer, operating as directed in Eastman's regular formula.

After a pleasant interchange of experience the company were invited to witness a demonstration of the development of the Eastman plates.

A gentleman present stepped forward and stated that he had that day made some drop shutter pictures in Boston Bay, of an Australian clipper ship under full sail, and had brought them in for development. Mr. Cooper thanked the gentleman for the opportunity afforded him of demonstrating so many important things at once—first, the rapidity and cleanness of the Eastman plate; second, the remarkable character of the developing solution and facility of restraining and controlling results, and last but not least, that he was not afraid to tackle a plate that he did not take out of his stock for demonstration. This evidence of confidence had its effect, as the development was a perfect success. The full power of the restrainer had to be used, as with the normal solution over-exposure was clearly indicated.

Next came a demonstration of the rapid printing possible with the gelatino-bromide paper, a positive being more than fully timed in half a second. This was hailed with enthusiasm by all, and much interest displayed in this new and valuable addition to the other vast improvements in photography.

Probably no former photographic meeting was kept up with so much enthusiasm and entertainment, the session not closing till 10:45 P. M. More than fifty gentlemen were in attendance.

In response to an invitation issued by the E. D. P. Co. to the Amateur Photographic Association of Boston and the photographers of the surrounding cities, the rooms of Mr. Conly were again crowded to their utmost capacity on the evening of Wednesday, January 9th.

Mr. Cooper opened the meeting by stating the object of his presence in Boston; and in a brief address paid a tribute to the generous spirit evinced by the amateur element in our art, and called attention to the beautiful work before them as the result of a process born of the painstaking research of a justly distinguished amateur and given to the world with princely freedom.

Some effort was made to induce Mr. C. to give some individual comparison as to the relative merits of the Eastman plate with some others which were named. This he politely declined to do, but for reply said emphatically that he believed he represented the best plate in the world, with all that statement implied, and would be willing to demonstrate the justness of his claim on invitation to do so.

After going over very much the same ground as on the Monday evening previous, the meeting was brought to a close at 11:15 P. M., the best time on record.

How's that for enthusiasm among the Knights of the Black Finger?

Paragraphic Pencillings.

BOSTON, MASS., Jan. 1884.

AT the January session of the Mass. Association of Photographers, held at the studio of Mr. J. F. Conly, 465 Washington Street, I had the pleasure of meeting an unusual number of the leading artists of the city and vicinity, drawn together by the postal announcement that Mr. David Cooper would exhibit the specimen work of Mr. J. H. Kent, of Rochester, and give practical explanation of the merits of the Eastman plates, for which we suppose Mr. Cooper is agent.

It is needless to remark that the display of Mr. Kent's work provided a most enjoyable and profitable occasion for those who

were so fortunate as to be present. For myself it was but the realization of a dream, I will not say a prophecy, for though this wondrous progress was foretold in my paragraphic pencillings of some years ago, I did not anticipate the degree of perfection now attained possible in the interim which has elapsed.

While Mr. Kent (excuse me, President Kent) has in these, and other specimens of work which we have seen, surprisingly developed the possibilities of the new process, we have in several of our local studios examined specimens that have challenged admiration.

The large prints of Mr. Kent's collection, notably those of children of uneasy age and also two or three canine subjects, are master pieces of "instant catching" by the Eastman "special," and show conclusively what is attainable with good material and skillful manipulation.

Mr. Cooper, after replying to various interrogatories suggested by the sample work exhibited, took his auditors to Mr. Conly's laboratory and gave them an ocular and highly satisfactory demonstration of "the way to do it," in working the Eastman plates, and provided them with the formulas which observation and experience had proved the most successful in manipulation. Mr. Cooper presented his thoughts upon the subject in a commendably modest and unassuming manner; and we think it was generally considered that such an exemplification of the work of the dark room is worth pages of circular instruction and amateur theorizing.

Mr. C. met the craft a second evening, but other engagements prevented our attendance.

We have taken some notes of progress among the fraternity hereabouts, and if it fails to get to you in season for publication in the current issue of the BULLETIN, we will be in time for the next.

Quite a number of changes in position and proprietorship have occurred in this city and vicinity, which deserve mention.

Our mutual friend Burrill, of Brockton, has invited the Association to visit him and

his reconstructed studio next month, and if health and weather permits we will join the party. With the opening year's good wishes, I am very truly, your irregular correspondent,

G. H. LOOMIS.

The Pyro-potash Developer.

BY DR. J. M. EDER.

THE potash developer has several advantages over that in which ammonia and soda find a place.

Carbonate of potash, in the first place, is a staple compound, while ammonia is always changing its degree of concentration; moreover, it is possible to develop plates with the potash developer for a longer time without fear of green fog, and the negative acquires further brilliancy.

The soda developer exhibits in general the same advantages as the potash developer. But a potash developer can be produced in a much more concentrated form than a soda solution, and this is a great advantage for travellers and for out of door photography in general, since a small bottle of potash developer will suffice for a hundred cabinet pictures.

The best plan is to have a mixture of potash and sulphite of soda, my formula being as follows:

A.—Pure carbonate of potash (free from chloride) 90 parts.
Water, 200 "

The solution need not be filtered.

B.—Pyrogallic acid, . . . 12 parts.
Sulphite of soda, . . . 25 "
Citric acid, 1½ "
Water, 100 "

Before use mix with three ounces of water forty to sixty drops of the potash (A), and the same quantity of the pyro. solution (B). The addition of bromide of potassium or of any other restrainer is not necessary. The image appears rapidly and brilliantly.

If more contrast and greater vigor are desired, then the addition of the pyro (B) should be augmented. Finer and softer re-

sults are secured by diluting the developer with another three ounces of water.

The negative assumes a greenish-brown tint; but a beautiful greyish-black tone may be obtained if an alum bath is made use of between the development and fixing of the plate.—*Year Book*.

Dr. Vogel's Opinion of the Eastman Dry Plates.

By permission, we extract from the letter from Dr. Vogel, printed in the *Philadelphia Photographer* for December, as follows:

"Beneath the clear sky of America quite different instantaneous work is obtained from that taken in the murky atmosphere of Europe. The most astounding things I beheld were the pictures of Lincoln, of Cambridgeport, on 7 by 9 inch plates. They represent sail-boats—filling almost the entire picture—in full sail, taken on the shadow side. The details are as truly preserved in the lights as in the shadows. The plates were Eastman's. I shall bring copies of the pictures with me.

"The same plates are used by Kent, of Rochester, who has been appointed president of the next Convention. Mr. Kent is a thorough workman, and is not afraid of any difficulty. The most remarkable of his productions were life-size pictures, taken directly. They were obtained in a good light, with Dallmeyer's rapid rectilinear lens, on thirty to fifty seconds' exposure."

A Correction.

WE are in receipt of a valued communication from Mr. Von Sothen, at Willets Point, wherein he calls our attention to an error which crept into an article published in our last number on the *Reduction of Over-developed Negatives*. The quantities given as grains should in all cases be read grams, the resemblance in manuscript being so great as to have deceived the compositor. The letter appears elsewhere.

The Death of J. H. Dallmeyer.

INTELLIGENCE has arrived that Mr. J. H. Dallmeyer expired while on his way to New Zealand, whither he was going for the benefit of his health. During the last four or five years the deceased gentleman has been suffering from the effects of over-work, and he has in accordance with the advice of his medical attendant travelled a good deal during this time, his business being under the charge of one of his sons.

Mr. Dallmeyer was originally engaged as a finished workman by the late Andrew Ross, when it was quickly apparent that he had talents of a high order, and he soon became the favorite of his employer. He ultimately married one of Mr. Ross's daughters, and on the death of Mr. Ross in 1859, many of the tools and appliances became the property of Mr. Dallmeyer, who now commenced business on his own account. Several papers on theoretical photographic optics were contributed by him to the photographic journals between 1860 and 1870, while all photographers are acquainted with the excellence of his work, showing that he was equally familiar with the theoretical and practical parts of the business. It is said that until his last illness every lens passed through his own hands before being sent out.

He died on board ship off New Zealand on the 30th of December. The body will be brought to England for burial. Age 54.

The house of Dallmeyer is now managed by the deceased gentleman's son, who is also the grandson of Andrew Ross.

[While regretting the sudden death of Mr. Dallmeyer, and while realizing the fact that the cunning of his hand and the creativeness of his brain will never more be productive of service to his friends and patrons, and to the future of photography, we are impelled in the interest of our art to make known the fact that during Mr. Dallmeyer's late illness (for three years, in fact) the business of the concern has been in charge of his eldest son, Mr. J. R. Dall-

meyer. The uniform excellence of the lenses produced during this time is satisfactory evidence that in the hands of his successor the interests of the photographic community will be amply guarded, and we here desire to bespeak for the son the same consideration and the same confidence which the world have always shown to the father.—EDITOR.]

Death of An Old Photographer.

THE many friends of Mr. M. Stuber will be pained to learn of his death, which occurred at his home in Louisville on January 9.

Though comparatively a young man, being only forty-one years of age, he was one of the oldest photographers in the city. For twenty-five years he has conducted a very successful business in the same location. He was always a student and kept well up in every improvement in his trade.

Mr. Stuber was one of the *best* men I ever knew. Quiet and uniform in his temperament, always gentlemanly, he made no enemies, for he treated every one justly and all his acquaintances were *friends*. He was generous to those in need, and the poor of his neighborhood have lost a faithful friend. What higher praise can be given him than this simple recital of his virtues! Would that the world was full of such men.

W. D. GATCHEL.

LOUISVILLE, Jan. 10, 1884.

IN a recent letter from Mr. Hutinet, he suggests the following method of toning prints upon the gelatino-bromide paper.

After the plate is developed, fixed and well washed, it is plunged into a solution of bichloride of mercury, ten grains to the ounce of water, and taken out, when it appears slightly veiled or whitish on the surface. Wash again and immerse in a solution of water, one ounce, and ammonia, five drops. It is immediately changed to a pure black and the work is done. Great care should be exercised to have all the hypo. removed from the print before using

the bichloride solution. This can best be done by means of the acetate of lead wash.

Mr. Hutinet further suggests the following method of procuring a high gloss on the gelatino-bromide paper print.

The print, after being toned as above, is dipped into a solution of alum, twenty-five grains of chrome alum to the ounce of water, and then immersed with a clean glass into water. They are then taken out together, so that the print clings to the glass. It is then allowed to dry, and when sufficiently so the print can be taken off the glass and will have a highly glossed or enamelled appearance.

Our Illustration.

THE pretty little illustrations for this month were made from negatives kindly loaned to us by a gentleman well known for his enthusiasm in the photographic art. The subjects were secured by means of our Detective Camera, which has afforded him great pleasure in frequently catching rare bits of character, and novel and unexpected incidents or mishaps of outdoor life. There is an evident indication in the pose of the groups that they were quite unmindful of the fact of their portrayal, and not at all concerned about the consequences. We hope shortly to again have the opportunity of presenting more of these pleasing and interesting pictures.

This instrument is peculiarly adapted to the tourist, who is enabled with it to catch any memorable, comical or laughable scenes that may occur on his travels, for its operation may be equally successful from the street, a carriage, the top of an omnibus, a railway train, or the deck of a steamer.

THE programme of the next meeting of the Photo. Section, which will be held on the first Tuesday evening of February, will be—

I. *Thirty-seven Years Behind the Camera*, by Mr. Abraham Bogardus.

II. *Photographic Novelties*, by Wm. Kurtz, Esq.

CORRESPONDENCE.

TAUNTON, MASS., Jan. 17, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Sirs: I have made up my mind to take the BULLETIN as usual, so I shall expect it every month. I don't want to give it up, for I like to read it very much. It is a very good book.

Very truly yours,

MRS. MARY A. CROSS.

HOKOKUS, N. J., Jan. 16, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gents: Enclosed please find two dollars (\$2 00) as subscription to the BULLETIN, a welcome monthly visitor that is always up to the times. Yours,

PETER O. TERHEUN.

VICTORIA, B. C., Dec. 31, 1883.

Sirs: Enclosed please find P. O. Order for the BULLETIN (1884). I find it well worth the money, and I like to pay in advance. Respectfully,

MRS. M. MAYNARD.

CHILLICOTTE, MO., Jan. 12, 1884.

E. & H. T. ANTHONY & Co.:

Please find enclosed ten dollars, to credit on my account for the BULLETIN.

Please continue sending it, as I cannot keep house well without it. I have had it ever since it was born.

Respectfully,

W. DUNLAP.

SAN BERNARDINO, CAL., Dec. 20, 1883.

E. & H. T. ANTHONY & Co.

Dear Sirs: I received the back numbers of BULLETIN, and am much pleased. Will not be without it in the future. Please try to get me the Sept. number; will pay double the price for it.*

Yours,

H. B. WESNER.

* Who has one to spare? We offer 25 cents each for perfect copies of that issue.

E. & H. T. ANTHONY & Co.

PHILA., PA., Jan. 19, 1884.

GENTLEMEN: Please send along the BULLETIN for 1884, as I look for it eagerly.

Yours,

ADAM W. SNYDER.

KIRKSVILLE, MO., Dec. 25, 1883.

E. & H. T. ANTHONY & Co.

Dear Sirs: Enclosed find postal note per \$2 00, for which send me the BULLETIN one year. I like it very much. A photographer who keeps pace with the times must have good photographic literature.

Truly, etc.,

G. W. TULL.

DAVENPORT, IOWA, Jan. 4, 1884.

GENTLEMEN: I have been using one of your Novel 8 x 10 cameras since they first came out for views and indoors, and in fact it is the best camera in market.

Respectfully,

M. M. ORMSEY.

MARKSVILLE, Jan. 1, 1884.

E. & H. T. ANTHONY & Co.

Dear Sirs: I received the apparatus some time back, but have been so deeply interested in it that I had no time to write. I am more than delighted with the Novel Camera. It is the admiration of this little town among the mountains.

Yours very truly.

E. J. FOOTE.

HARTFORD, CONN., Jan. 4, 1884.

I never saw better plates (Eastman's).

BUNDY.

BETHLEHEM, Dec. 28, 1883.

E. & H. T. ANTHONY & Co.

Dear Sirs: I have again opened in my native town and am getting along nicely. I am using Eastman Special plates, and am positive there cannot be any better ones.

Truly yours,

F. L. STUBER.

NEW ORLEANS, Dec. 29, 1883.

E. & H. T. ANTHONY & Co.

Dear Sirs: We like the rapid rectilinear lens just received from you ever so much, and since trying it we do most cheerfully give preference, by odds, to these lenses over all others we have ever seen.

Respectfully,

W. W. WASHBURN.

BOSTON, Jan. 15, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Dear Sirs: The Guenther - Wagner Water Colors and Photographic Retouchers at the grand Foreign Exhibition here have just been awarded the *First Prize Gold Medal and Diploma*.

They were given a severe test at the Mass. Institute of Technology, and General Walker, the President of that Institute as well as of the Committee on Awards, in handing the medal to me said: these colors are of very superior quality and worthy, indeed, of competition with the best English or any other colors in the market.

Truly yours,

JOHANNES ROELOFF.

We find in the *Galveston News* of the 13th instant, the following tribute to the skill of Mr. P. H. Rose, whose exhibits at the meeting of the Photographers' Art Association have heretofore been so much admired:

SAN FRANCISCO, Jan. 12, 1884.

P. H. ROSE, ESQ., Galveston, Texas.

My dear Friend: I endeavor to express through *The News* my gratitude to my old Galveston friends for the album containing their photographs and autographs.

I am very grateful to you personally. The work of the artist is simply perfect, and I can well understand the patient labor and skill required for its accomplishment. The naturalness and perfection of the resemblances could not have been improved. I wish to repeat my thanks to you for the splendid execution of the work.

Wishing you a happy new year and a prosperous future, I am, very truly your friend,

GEORGE FLOURNOY.

A Correction.

BALTIMORE, Jan. 9, 1884.

E. & H. T. ANTHONY & Co.

Dear Sirs: I would respectfully call your attention to an erroneous statement in the report of the Operative Photographers' Association, in the December number of BULLETIN. On page 411 it is stated that "Roettger of Philadelphia probably constructed and used an instrument by the name of the Solar Camera before anybody else, and no doubt credit is due him. Woodward of Baltimore came much later."

Doubtless you know the history of the Solar Camera as well as I do, and I trust you will correct the error.

I have Roettger's statement under oath that I was the inventor, etc., etc.

But it is not necessary to revert to the record of the patent suit, and you in justice should make the correction.

Yours truly,

D. A. WOODWARD.

WILLETS POINT, Jan. 5, 1884.

MR. H. T. ANTHONY.

Dear Sir: In compliance with your request I take pleasure in giving you the following, my experience with hydrokinone as a developer for gelatine plates, and I am glad to say that though my rather sanguine expectations in this direction are as yet by no means entirely fulfilled, I have found the reducing agent in question to possess properties which are conducive to results not to be obtained by any other method of development.

The formula, which by numerous trials I have found to give the best results, stands thus:

Crystals of hydrokinone,	10 grains.
Water,	1 ounce.
Ammonia fortis,	2½ drops.
20 grains sol. of potassi- um bromide,	1 to 2 drops.

The exposure, as compared with that necessary for either alkaline pyro. or ferrous oxalate must be doubled, and it may be safely prolonged to over three times this duration, as there is no danger from over-timing. The reduction under the developer will set in rather quickly; that is, the highest lights will appear very soon; the half-tones, also, will develop with fair rapidity, but the shadows will invariably hang back, and, unless a minimum amount of bromide be used, the negative will be hard and have the glassy shadows of an under-timed plate. No forcing with ammonia is admissible, as it would in all cases produce a general fog over the shadows—pea-green by reflected, and pink by transmitted light; and this same fog would occur if the restrainer were entirely omitted. But if the exposure was sufficient and the developer be mixed as stated, a fine negative may be developed in three or four minutes, which is very similar in color to a wet plate, and which, if too thin, may be readily brought up to any degree of density by adding an extra drop of bromide per ounce of developer as soon as all the detail is out. Reduction in the shadows will then be checked at once, and intensification proceed with considerable energy.

To sum up, I am led to say that, as according to my own observation the developing energy of hydrokinone is about two and a half times less than that of either pyro or oxalate, I consider its use for quick work out of the question, and for portraiture not preferable to any other developer; but for copying, and especially for transparencies and the reproduction of line work, excellent, perhaps unsurpassed by anything else. With an exposure of about one-half the time required for an average wet plate, and with the addition of an extra drop of bromide as soon as the finest detail in the shadows is visible, a negative of great vigor and with absolutely bare lines may be produced, which after fixing may be strengthened with bromide of copper and silver to great capacity, and without any danger of closing up the finer detail.

If by further trials I should succeed in

improving the present formula I shall be glad to keep you advised, and I would be thankful in turn for having the opinion on this subject of other experimenters, whenever they may come to your notice.

Very respectfully yours,

VON SOTHEN.

{ OFFICE OF ISLAND PLANING MILL CO.,
538 to 552 Cape St., MILWAUKEE,
December 19, 1883.

E. & H. T. ANTHONY & Co.

Gentlemen: Some months ago, when I purchased of you an 8 x 10 Dallmeyer rapid rectilinear lens, I promised a report of its working in my hands.

It may be proper to state that my outfit consists of the above named Dallmeyer, a Darlot 8 x 10 wide angle, a Royal portrait camera 8 x 10 and stand, and an 8 x 10 double swing reversible camera, your patent [Novel], together with your brass top telescopic tripod; the most convenient and rigid tripod in the market, I know, for I have tried them all. I may speak equally strongly, by the way, of your 8 x 10 "Novel" double swing camera. For convenience and celerity of reversal, and general neatness and utility of construction, it is the best camera I know of. But it is of the Dallmeyer lens I have particularly to speak, and my earnest recommendation to all my amateur friends in photography in this city has been and is—by all means, if you can, get a Dallmeyer.

As is usual with amateurs I have dabbled a little in all kinds of photography, finding in each branch fresh fascination. But my most persistent work has been done in portraiture and instantaneous marine and street work. In this latter I have found my keenest enjoyment and have, perhaps, succeeded best.

Before obtaining my Dallmeyer I had experimented with many of the so-called "rapid" lenses, with the result only of rapidly lowering my standard as to the limits of achievement by amateurs. But even a greater "plug" than I must have done good work with a lens so faultless as that now in my possession. I will spare you any

recitals of what I have done. Probably you already know that nothing can exceed the calm joy of an amateur contemplating his own work. There is nothing like it for sincerity. I am, however, thus much modest, that I ascribe all my successes to my outfit, and all my failures to myself.

Two achievements of my Dallmeyer used with a lightning drop shutter I cannot forbear mentioning. One was an instantaneous view under a dark and heavily clouded sky—no glimpse or glimmering of sunlight, a damp northeaster blowing spray from old Michigan's heaving surface on to my camera and myself. At a venture I made the exposure to "see what I could get." My dark room showed me the best negative I have yet obtained of the lake, saving only that the stop used, No. 2 medium, showed less definition in the distance than I could have obtained on a bright day with a No. 3.

The other exposure was on a bright day, just as quick as a well made drop shutter would allow, but using a No. 4" (next to the smallest) stop. Although the focus was a mere guess on account of haste, the small drop used saved the picture and gave me an excellent negative, full of detail, clear and sharp to the edges. Remembering the formula for other lenses in instantaneous work—"use largest stop and try only in full sunlight"—I consider these results as establishing over all others the quickness and merit of the Dallmeyer lens.

It may please you also to know that after trying numerous other plates I have returned to the Eastman Special for all portrait work. The softness in gradation, the delicacy of the half-tones, the detail in the shadows are very pleasing, and by me, at least, obtained on this plate as on no other.

Our community of amateurs in this city grows rapidly. Their enthusiasm is contagious. The professionals have been uniformly obliging and courteous to us—ever ready to assist us with information and practical demonstrations. Thanking you personally for your kindness and for all you have done for amateur photography, I am,

Yours, etc., HENRY L. SMITH,

Sec'y and Treas.

Beautiful Pictures.

MR. IRVING SAUNDERS, of Alfred Centre, N. Y., has recently favored us with a visit and gratified us with a glimpse of some of his later efforts in portraiture, and a print of the Kinzua railroad bridge. This work is excellent in every respect, especially so in the management of the light. One large head and bust of a little girl was exceedingly well done and faultless in every way. The bridge subject was also very much admired. Mr. Saunders has only quite recently ventured on dry plate work, we understand, and his success is remarkable, part of which he attributes to the possession of a Dallmeyer rapid rectilinear.

By some accident, a number of the copies of the illustration in the December No. of the BULLETIN were bound in which would have been rejected, if they had been submitted to the inspection of the Editor. We regret that so beautiful a negative should not have been properly represented. The two beautiful little gems, however, that appear in this number, will more than make amends.

Fire!

ONE of the factories whereat some of our Cameras were manufactured was wholly destroyed by fire on the night of Thursday, the 17th inst. New quarters have already been secured, and though we may for some little time find difficulty in supplying certain styles, soon our facilities will be better than ever. In this respect both the trade and ourselves will be the gainer.

A Arte Photographica.

WE are just in receipt of the first number of a new photographic journal issued in Oporto. The frontispiece is a very creditable view made on gelatino-bromide paper from a gelatine negative, by a lady, Exma. Sra. D. Margarita Relvas. On a future occasion we may find an opportunity to give a more extended notice.

"Gie Us Another, Mon."

THE *British Journal of Photography* for Dec 28, 1883, says: This is almost equal to ANTHONY'S BULLETIN crediting Mr. Kurtz with the invention of retouching.

On page 299 of the *Phrenological Journal* for May, 1872, we find the following: Mr. Kurtz also introduced the practice of retouching negatives with a pencil, by which the hard lines of contour are softened, and accidental or natural blemishes meliorated.

Notwithstanding the directness of attack attempted by "Free Lance," Mr. Kurtz enables us to parry the ungraceful thrust by the remark that to the best of his knowledge, the statement is substantially true. He says: Many years ago, I had a partner by the name of Huston, and suggested to him the propriety of touching out freckles, blotches, deep shadows and other blemishes from the negative, and endeavored to persuade him to devote himself entirely to what I then considered a very important work. At that time no one in the city, nor in this country, nor elsewhere, so far as I know, had ever attempted it, especially as a regular branch of the business. Occasionally I am aware that slight modifications were sometimes made in case of deep shadows in the labial furrow (the lines running from the nose to the corner of the mouth), but never as an indispensable supplement to the every-day practice of the photographer. I think the statement is positively truthful as it stands, and there are probably many among the older heads who will corroborate it.

"Waller, my lad; overhaul your log-book, and make a note on't."

TRY DERMALINE.

WILLETS POINT, Jan. 16, 1884.

EDITOR BULLETIN.

Dear Sir: Allow me to invite your attention to a mistake which occurred in an article on "*The Reduction of Over-Intense*

Negatives" in the last number of your valuable publication, page 393, inasmuch as "grams" should be read in all cases where "grains" are mentioned.

Though on investigation the error becomes evident, the description of the process as it now reads is rather perplexing, and as I have found the salt in question (sesqui-oxalate of iron, or as the article has it "ferrid oxalate") to possess all the qualities which the publisher claims for it, I think it would be in the interest of every dry plate worker to have the matter corrected.

For those who are better acquainted with the old-fashioned ounces and grains, the *modus operandi* would be simply thus:

To every quart of oxalate developer 1 to 4, old or new, add 240 grains of oxalic acid and 32 grains of potass. oxalate, or to every fluid ounce $7\frac{1}{2}$ grains of oxalic acid and one grain of oxalate of potass. The latter merely accelerates the dissolution of the acid. Immerse in hot water and shake frequently; when all is dissolved filter in an evaporating dish and set in a dark place to cool. The resulting crystals of $\text{Fe}_2(\text{C}_2\text{O}_4)_3$ will, when dry, average five times the weight of the oxalic acid added, viz., about 36 grains per fluid ounce, or nearly two and a half ounces per quart of solution.

As regards the strength of the reducing fluid, I have found a 10 per cent. solution, as recommended by the author of the article, to be so out of control as to totally destroy a very intense negative in two minutes, while a two per cent. solution and even one of one per cent., or five grains of the green crystals to every ounce of hypo. bath, proved not only sufficiently energetic, but very reliable and perfectly safe.

The great simplicity of this process, by which any definite degree of reduction may be obtained directly and by only one operation, will no doubt gain for it the favor of every one who will give it a trial. I, at least, am free to confess that I consider it far superior to any of the older methods with either the chloride of iron or chloride and bromide of copper.

Yours, very truly, VON SOTHEN.

ANTHONY'S PHOTOGRAPHIC BULLETIN

FOR FEBRUARY, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

Page, for a single issue,	\$15
Half page, " "	8
Quarter page, " "	5
Eighth page, " "	3
Special Notices, per line, . .	25 Cents.

Anthony's

Photographic Bulletin,

ILLUSTRATED.

Terms for 1884: Two Dollars.

Unillustrated, One Dollar.

Payable in Advance,

And only to those who pay.

Corks and Their Use.

IN the whole range of photographic apparatus few articles have so great an importance and few are so intrinsically small in value as the subject of our notice; yet their use is as insufficiently known as their employment is frequently neglected. Every photographer who has any care for the quality of his work and the integrity of his chemicals should always make a point of having by him a number of corks of assorted sizes and shapes ready for any emergency, such as the loss or breakage of one in use, whose absence would otherwise have to be repaired by a twist of paper or the use of an old cork from an empty bottle, which might carry serious contamination.

Such an assortment of corks, too, should be of the best quality; for nothing is more annoying than, after carefully selecting and fitting one to a bottle, to have it break short off at the neck at some critical moment, or perhaps, discharge a shower of dust into some liquid that is especially required to be kept clear. Although we speak of their intrinsically low value, they are to be purchased of a quality that commands a price that would most likely astonish many of our readers. A fair sample of cork, suitable for small bottles, may be purchased for a less sum than one shilling per gross, while a much finer quality, usually termed "velvet," would run up to two or

three times that price, and this is the quality we would recommend the photographer to purchase. As an example of the store set upon the quality of a cork by some people we may instance the champagne makers, who frequently, though buying almost by millions, give upwards of a penny each, and sometimes close upon three half pence each, for the kind they employ.

Such corks have just the qualities that every one kept in store by the photographer should possess—elasticity and softness; and though these may be improved by manipulating the cork, they require for their effectual production a fairly good sample with which to commence. It is, however, astonishing how greatly a cork may be improved by a little careful pressing or rolling.

The chemist usually keeps for this purpose a cork-presser or cork-tongs, by means of a few simple, gradually applied presses from which an obstinately hard cork is rendered amenable to "persuasion" so as to enter a bottle-neck of the narrowest dimensions. Photographers, however, are rarely possessed of this most useful instrument, and when they wish to modify the hardness of a cork will, perhaps, give it a few nips between their teeth—a useful plan, but much to be depreciated on account of the undesirability of the presence of moisture often thus imparted. The better method, in the absence of a cork-presser, is to wrap the cork in a few folds of paper and roll it lightly under the foot. It will then be found greatly improved in softness and elasticity. Sometimes immersing corks for a time in boiling water will also materially improve them when an inferior sample is employed, such as is frequently the case in the bottles of chemicals direct from the dealer; for the cork will be so hard as to cause it to break in extracting—an accident often followed by a large piece dropping or being pushed into the bottle.

In such a contingency it should be at once removed, both for the sake of appearance and the purity of the chemical itself. We do not know anything that looks worse on a chemical shelf than one or more bottles with corks lying at their bottom. The

readiest way to remove corks so dropped or pushed into a bottle is one often adopted by the expert, namely, to double a piece of string, and, holding both ends in the fingers, introduce the loop thus formed into a bottle, and by a little manœuvring unfold the cork by the string and carefully draw it up to the neck, when a smart pull will bring it out of the bottle.

Many persons prefer glass stoppers for their bottles, and for corrosive liquids they are necessary if a prepared cork be not available; but the glass stopper as ordinarily met with is so badly fitted that it might be replaced with advantage by a suitably prepared cork, which possesses the advantage of not becoming fastened in the neck in the manner that a glass stopper does too frequently.

To prepare a cork so as to render it suitable for securing very volatile liquids—such as ether, collodion, etc.,—from evaporation, the following will be found an excellent plan: Take—

Gelatine or good glue,	½ ounce.
Glycerine,	6 drams.
Water,	1 pint.

Dissolve the gelatine in the usual manner, and add the glycerine. The solution should be heated to about 130° or 140° Fahr., and the corks placed in it and allowed to remain for several hours. They will then be so impregnated with the solution that, after taking them out and placing to dry in a place free from dust, they will, when carefully fitted to a bottle, act better than nineteen stoppers out of twenty in securing the contents from evaporation.

When the liquid to be secured is of an acid or corrosive nature it is evident that an ordinary cork, or one treated as above, would very rapidly disintegrate and become useless, and fall in small particles into the liquid. To prevent this occurring, however, another method of treatment is available. The corks, after being softened by the press or rolling under the foot as described, are immersed in a mixture of vaseline (a well-known petroleum preparation) and white, solid paraffine, in the proportion of about

two parts of the latter and seven of the former, the whole kept for some time while the corks remain in it at a temperature of about 130° Fahr. Upon removal they should be gently wiped with a soft cloth, and when cold stored for use. Corks thus treated will, while they are kept cool, be entirely protected against the action of acid so long as it is at the ordinary temperature of the atmosphere.

We will conclude by drawing attention to the usefulness of corks for making a wash bottle or a collodion pourer, the latter being most useful for the chromotype and other processes where a clean film of collodion is desirable. This little apparatus can be made by any one, and the latter in particular will be found most useful. All that is required is to bend a piece of glass tube either into the shape of a syphon or merely curved at one end, and then to insert it, with also another slightly curved piece for a mouthpiece, into a cork previously pieced with holes carried through the ends. This piercing is done by cork-borers—brass tubes ground at one end so as to form a circular cutting edge. They can be purchased of all sizes from any dealer in chemical apparatus. To use them the cork is placed against a solid object—such as a wooden bench, etc.,—and the “borer” applied with a gentle pressure while being continuously screwed round. The cork is soon pierced with a fine, round aperture, which closely clips any glass tube of the right diameter that is inserted in it. Many most useful little pieces of apparatus can be put together by the aid of corks so bored; and we think a set of cork-borers might well find a place in the dark room of every professional and amateur photographer.—*British Journal of Photography.*

Tracing and Etching Photographs.

BY HERBRET J. RIGBY.

IN what follows I purpose affording photographers an opportunity of demonstrating to their own satisfaction, at least, and with-

out doubt to that of their friends also, that they do possess that artistic taste and ability which of late appears to have been denied to many of our brethren.

It fell to my lot, not long ago, and under circumstances which need not here be mentioned, to have to produce a delicate etching from a photograph. If photographers could only realize adequately the pleasure there is in being able to convert by means of the needle-point tones and half-tones of a silver print into the free-looking, sketch-like lines of the etching, more attention would be bestowed upon this art. What fine, free, and, withal, truthful representations may not be made, conjoined as this art is with the ability to stop out altogether from the picture everything that is *outré*, offensive, in bad taste, or unrequired? For executing a work of art of the nature now being described there is no genius demanded save that which can be acquired; nor is the faculty of imitative drawing absolutely necessary, the essential requirement here consisting in the ability to trace carefully, and represent tones, by a series of lines, the nature and direction of which constitute the truthfulness and demonstrate the skill of the artist. The acquisition of this skill is greatly aided by the attentive studying of some good examples of etching and line engraving, both of which are everywhere, happily, of easy access.

The ability to trace accurately and with a free hand and artistic grace being assumed, I now approach the consideration of the technical methods by which this peculiar acquisition may find a fitting outcome in photographic art. But in order to test one's ability to trace, with a finely pointed needle, a photograph, so as to have the likeness retained, recourse should be had to the following piece of practice: Print upon albumenized paper an easily recognizable portrait of some well-known friend, and fix this print, taking the precaution of not toning it. Now, with a finely pointed steel pen and suitable black ink, trace the portrait all over with fine lines and cross hatchings where required, until satisfied that the whole of the tints are represented by lines.

Then remove the photograph by floating the paper upon a solution of bichloride of mercury, by which every tint will disappear, leaving the paper white, except the ink tracings made by the pen. This will reveal the measure of success that has attended the effort. If the likeness and expression have been preserved, and the various muscles and folds in the clothing seem to be well delineated, the effort may be conceded to have been successful, and the way is paved for practicing the following application of the skill thus displayed.

A sheet of very pure gelatine is procured. It must be quite free from any defects, and have one side faced with collodion. A few sheets may be readily prepared by coating with plain collodion a plate of glass previously rubbed well over with powdered French chalk, or polished with a thin solution of bees'-wax in ether. The plate being levelled is now coated with gelatine in much the same way as emulsion is applied, only in order to ensure the most perfect clearness of the subsequent film the white of an egg, previously beaten to a froth, must have been added to and thoroughly stirred up in the liquefied gelatine, which up to this stage has been subjected to no more heat than has sufficed to liquefy it. Now apply heat to such a degree as to coagulate the albumen, after which the gelatine may be decanted into a bottle. It will then be singularly bright and pure. The degree of thickness I prefer to employ is that of ordinary writing paper, and if the gelatine has been clarified in the way I have directed the sheets obtained will be exceedingly fine. I have here taken for granted that every one is aware of the method of preparing these films; that is, by coating the prepared glass with a sufficiently thick film, and, after the gelatine has become quite dry, removing it from the glass by the aid of a penknife to start the separation.

In making a tracing from a photograph, if lines of the finest quality be desired, the services of an etching point must be had recourse to. The way I make these is to obtain a few wooden handles of steel pen-holders and insert in them the halves of

broken needles, leaving the point projecting about three-eighths of an inch. The handle should be cut away to a point like that of a lead-pencil. One or two of these I rub upon a hard oilstone, so as to bring them to a sharp, triangular cutting point: the others I leave as they are. Having laid the gelatine sheet upon the photograph which is to be traced, paste a strip of gummed paper along the upper edge of both to ensure correct register, and then proceed very carefully to trace the outlines. If it be a landscape with distant mountains, let the latter be traced lightly, making sure, however, that the surface of the gelatine is broken or cut into. Avoid anything like labored work in the details; but let the ravines and crags be represented by a few effective, simple lines. There is here room for much display of taste. The true artist produces great effects by small means. In foliage the nature of the tree can easily be shown without having recourse to laborious, "niggling" work. The outlines of the masses having been drawn, the details are next given so as to show the character of the tree. If the artist has no experience to guide him, then let him have lying beside him a few examples of engravings or pencil drawings, from which he will ascertain by what means the various effects are produced.

To watch the progress made, provide some finely produced plumbago mixed with lampblack, and, taking a little upon the point of the finger, rub it smartly over the surface, by which the etched lines will become black. Now insert a sheet of white paper between the photograph and the gelatine, and every touch made with the etching-point will be plainly visible. When completed a negative may be made by superposition, from which may, in turn, be produced either silver prints, photo-lithographic surfaces, or blocks for surface printing. A pen and ink may be employed either alone or in combination with the etching-point; but I prefer to use the pen and ink on the collodion side of the film, which does not seem to answer so well for etching on. For extreme delicacy the ink is inferior to the etching method, as it gives

thicker lines; but if the pen be very fine, and the surface of the collodion moistened by applying the tongue and afterwards dried, then the finest touch will be registered. I have in this way made outline tracings from photographs for the magic lantern which, in the estimation of connoisseurs, were considered more effective than the pure photograph. When the production of subjects for lantern projection forms the aim of the operator, the gelatine may be spread upon plates of the requisite dimensions and allowed to remain there. But the thickness of the glass plate intervenes between the tracing-point and the photograph, and much skill will be required in preserving the outline accurately unless very thin French glass be employed.—*British Journal of Photography*.

A New Plan of Reducing the Intensity of Gelatine Negatives.

MANY methods have been proposed for reducing the intensity of too powerfully developed negatives, which have thus become too dense. Some of these—as, for instance, perchloride of iron and iodine—attack the shadows rather too vigorously, and hence require to be used with much discretion; but still they have found advocates among practical men. Others use chloride of copper (or, what amounts to the same thing, a mixture of sulphate of copper and chloride of sodium). In this process, the copper chloride forms a thin film of chloride of silver, while subchloride of copper is precipitated. Subsequent treatment of the negative with hyposulphite of soda solution dissolves this chloride of silver, and leaves behind a thinner film of silver.

Herr L. Belitzki, of Nordhausen, has recently brought forward another weakening method, which is particularly suitable for negatives developed with ferrous oxalate. It is based upon the observation that the green crystals which are formed in all old oxalate developers, if dissolved in hyposulphite of soda solution, form a ready means of reducing too dense negatives which have not been intensified.

The pure solution of the green double oxalate of iron and potash will not attack silver, and, therefore, even if left for hours in contact with a negative, will not weaken the film.

But a mixture of the double oxalate of iron and potash with hyposulphite of soda does attack silver, the iron salt yielding up its oxygen to the silver, and forming silver oxide, which in a nascent condition is at once dissolved by the hyposulphite.

Herr Belitzki dissolves from 5 to 10 parts of the green double salt in 100 parts of hyposulphite solution freshly prepared (ordinary concentration); but as he prefers to make use first of all of a weak solution, only five per cent. of the green double salt is employed to commence with. The mixture is employed in daylight; it is poured into a dish, and the fixed negative, which need not be washed, is then put in, and taken out from time to time to be examined as a transparency. As the weakening of the negative goes on for a little while after it is put into water and washed, Belitzki recommends that the film be removed from the bath before it is quite thin enough.

The mixture of the green double salt and hyposulphite of soda may be preserved in a dark place most perfectly, and can be used again and again. As soon as a yellow precipitate makes itself seen, the liquid should be filtered, and when it gets too weak, it is strengthened by the addition of a few more crystals of the green salt. That a portion of a negative may be reduced in intensity with the solution is but a matter of course, a pipette or brush being used for the purpose. The stronger mixture, containing ten per cent. of double salt, may be employed for taking stains out of linen, shirt-cuffs, etc.

This observation of Belitzki's at once explains how it is that negatives developed in old and often-used ferrous oxalate solution have usually such thin films. It teaches us, therefore, that all who develop with ferrous oxalate should always employ freshly prepared solutions; too much density can always be cured afterwards in the way we have just shown.—*London Photo. News*.

A Developer for the Amateur in the Field.

PROBABLY no human being ever came back more utterly disgusted with life, with his environments and with everything that goes to make life miserable, than the amateur who has started out upon his summer vacation intending to develop in the field and carrying with him his solutions for ferrous oxalate development. The exact figures are not in mind, but something in the neighborhood of sixty-four fluid ounces would be necessary in ordinary hands for the development of two dozen 5 x 8 plates. The breakages which inevitably occur in the mountains or forests, and the difficulty of replacing chemicals that are exhausted, are troubles which the amateur feels most seriously when on account of his inexperience he is the least able to overcome them. The professional, of course, will smile, and the old amateur case-hardened to every sort of disaster regards such things as grown people regard the sorrows of a child. However, to the inexperienced amateur these troubles are just as real, just as vexatious and discouraging, as though no possible methods had ever been invented for surmounting them. Some gentlemen are so successful in their exposures, the point from which to take their views and in the general work of picture composing, that they bring home their plates to be developed at leisure with a calm confidence, which is perfectly astonishing to those who are not so successful, and who frequently are obliged to try twice before getting some peculiarly good view just to their taste upon the plate. The knowing ones may be pardoned if they skip an article devoted entirely to the principles involved in devising a developer for the amateur in the field. There is, however, a certain large and, perhaps, growing class who, if the solutions can be sufficiently reduced in number and bulk, would be very glad to do all their work at once, and not bring home any undeveloped plates to be mixed with those which are unexposed, and perhaps, end their career by showing two views in one negative.

In selecting the chemicals for a field developer, especially if the field is to be far away from the large cities, it is certainly a great advantage if the chief chemicals used are such as can be obtained from country groceries or drug stores. Those substances should preferably be used which will keep, and of which we have the greatest choice in our methods of transportation. It is also necessary to select such substances as can be carried in the most concentrated form. The advantage of this is, that it allows the bulk to be made up at any time by the addition of water. Thirdly, as far as possible, substances should be carried in solution, in order to avoid, first, the difficulty of weighing in the field, and, secondly, the danger of having powders or loose chemicals in one's photographic outfit. In the dark room, consisting as it often does of a dusty corner, narrow closet, or even a tent extemporized from old shawls and quilts, the manipulations must be as simple as possible, and weighing or even measuring of anything dry is not only difficult but very frequently dangerous. The volume of ferrous oxalate solutions, and the difficulty of making them quickly in the field, is a practical bar to their use. To these disadvantages we might add the length of time taken for perfect development. Practically, then, the developer for the field must be the alkaline pyro. Whether the alkali shall be ammonia or soda is somewhat a matter of taste to the individual; but the fact that ammonia cannot everywhere be obtained, that even when carried as carefully as possible in hot weather its strength is constantly changing, are reasons why the amateur should choose soda instead. Soda can be obtained at every country store from one end of the land to the other, and as a saturated solution is sufficient when of a standard strength for all practical purposes, the use of it is exceedingly convenient, because there is neither measuring or weighing in its use.

In the summer time alum is absolutely necessary to prevent frilling. And as the pyro-developed plates are very likely to be somewhat yellow in color, oxalic acid is

necessary in order to form a clearing solution. Fortunately this acid is as easily obtained as the soda itself, and as the proportions in which it is used can vary within considerable limits without altering its effect perceptibly, it is almost in the same category as the soda in not requiring actual measurement. Hypo. and the sulphite of soda complete the list of absolutely necessary chemicals. The hypo. can be carried in paper bags enclosed in baking powder boxes, the weight of each package being approximately determined beforehand. In looking over this list of chemicals we find that only two call for accurate weighing, and fortunately this weighing can be done at home, and all necessity for using the scales in the field avoided.

Briefly, then, the following formula will give the developer for most of the dry plates now in the market, which will be sufficiently satisfactory to suit almost any amateur as the nearest to simplicity compatible with good keeping qualities. No claim whatever of originality is made for it, since it is merely a modification of the well known developer proposed by Mr. Newton. The soda solution consists of a saturated solution* of washing soda, to which is added sulphite of soda twenty grains to the ounce. This will keep indefinitely, may be made up in quantities, if desired, or the sulphite of soda can be put into a large bottle and the saturated solution poured in afterward, until a definite mark giving a known quantity is reached. The pyro. solution is made by using pyro. and oxalic acid—pyro., one ounce; oxalic acid, one-

quarter of an ounce. Perhaps the best form of the solution will be when water is added until each dram contains four grains of the pyrogallic acid. This makes a concentrated solution easily measured and quite convenient to carry. Any other proportion, however, of pyro. and water can be used. When the quantity of water is fixed and the quantity of pyro. determined upon, dissolve the oxalic acid in the water, and when the solution is complete add the pyro. Prepared in this way, of a strength anywhere from one grain per dram up to saturation with pyro., the fluid will keep water-white, whether the bottle be tightly stoppered or loosely stoppered, full or half full, exposed to the light or kept in the dark, in hot weather or cold; and when it is said keep, we mean that it will be colorless for at least six or eight months. Solutions made as long ago as April, 1883, are as clear as spring water at this writing, January, 1884.

The bleaching bath or hardening solution is made at the rate of one ounce of powdered alum, one-eighth of an ounce of oxalic acid and ten ounces of water. Very considerable variations from these proportions will not seriously affect the result. To make the developer (say) for one ounce of solution, take four grains of pyro., (which will be one dram of the solution) from one to two drams of the soda solution, and make up to one ounce. This may be called an approximately normal developer for a landscape plate like Carbutt's "B." The proportion of pyro. to soda must necessarily be varied with the exposure, and with the brand of plate used. With a Tropical or Special plate a slight variation from this will be necessary; but here seems to be a foundation for a developer more widely applicable than any other that has been proposed, and forming the widest variation with the simplest possible means. It is not supposed that this is the best possible developer, but it is a practical one that can be used in the field under the most difficult circumstances, and will certainly produce plates which even professionals consider first class. One word in regard to the method of development only is necessary,

* As saturated solutions of soda vary in the amount of soda they contain with the temperature by more than 50 per cent., it is necessary to add a word of explanation in order to secure even an approach to uniformity. Pour warm water upon clean bright soda crystals, free from the white powder as much as possible. Stand in a moderately warm place till no more will dissolve. Then pour off the liquid and put away till it cools to the temperature of the dark room, or better, to 60 degrees Fah. Part of the soda will be thrown down if the solution has really been saturated at 100 degrees Fah. The solution thus made will be of good strength, and will contain nearly a fixed quantity of soda which though not uniform is near enough.

and that is, stop when all the details all over the plate are clearly out, and when the picture is visible on the back. Secondly, by hook or by crook obtain plenty of light. If it is of the right kind, its advantage will outweigh any danger to the negative which can possibly come from too much illumination. As soon as the plate has been washed, it should go at once into the alum bath. At a pinch the alum bath may be made by putting a half teaspoonful of the oxalic acid, a couple of teaspoonfuls of the powdered alum into the tray, and adding four or five ounces of water. The solution will be sufficiently complete in a few minutes to remove the disagreeable yellow stain. It will be noticed that no bromide and no restraining solution is mentioned. Neither are needed. A dipperful of cold water is all the restrainer which an amateur needs to have, and if the picture comes too slowly, his very best plan is to make up another ounce of developer and give the plate an entirely new dose.

It may be well to say to the amateur that until he has had considerable experience he may abandon the idea of making a good negative out of anything except a normally exposed plate; what the average amateur calls an under or over-exposed plate the professional would consider as hopelessly ruined, and never would make an attempt to save it. The following in tabular form puts the formula in a little more definite shape for those who don't wish to make calculations and only care to follow the rules directly:

A.

Solution of sal soda (saturated at 60° Fah.,) . . . 10 ounces.
Sulphite of soda (or 2 oz. of a solution saturated at 60° Fah.,) 1 “

B.

Pyrogallic acid, 128 grains.
Oxalic acid, 32 “
Water, 2 ounces.

Dissolve the oxalic acid in the water and then add the pyro. This solution will keep indefinitely, even if the bottle is only partly filled and not tightly corked. To form the

developer for a 5 x 8 plate take (say) four drams of soda solution (A) and two drams (equal to eight grains of pyro.) and make up to two ounces. Pyro. is to be varied according to the plate, exposure, etc., and the same is true of the soda. More should be used or added to the developer already mixed if the image comes out too slowly. It is not necessary to give directions for development, since the principles are the same as for any alkaline developer.

For carrying purposes the pyro. may be made still stronger, or so strong that the solution is saturated and the crystals float in the liquid. The formula then becomes:

Pyro., 128 grains.
Oxalic acid, 32 “
Water, 3 drams.

Proceed as before, dissolving as much of the oxalic acid as the water will take up. Then add all the pyro. and the remainder of the oxalic acid. When ready to use make up with water to the required quantity. To be exact with the soda mixture, use six ounces of warm water to each Troy ounce of clean, bright crystals of common sal soda.

For those who care to reduce the pyro. solution to its minimum volume we would suggest the following: Take a 3-dram vial, measure out twenty grains of oxalic acid, dissolve as much as possible of the acid in a dram and a half or two drams of water; then add eighty grains of pyro., which will make more than a saturated solution. This will keep indefinitely, and when it is desired to have the pyro. for use it is only necessary to pour it out into a larger bottle and make up the quantity to two and a half ounces. The solution then will contain four grains to the dram. If a weak solution is necessary, of course more water can be added to suit the individual. The reason for adding the oxalic acid first is, that this being the substance which keeps the pyro., it is important that it should be dissolved in the water first, before the organic matters have any opportunity to commence action upon the pyro. At the rate, however, of four grains to the dram, the

pyro. is in so concentrated a form that by using a number of bottles, which one can pack in a baking-powder box, little danger from breakage need be anticipated. Practically nothing short of a tornado or a railway smash-up would break the pyro. bottle thus packed, and the amateur with his pyro. solution and sulphite of soda in the form of a saturated solution is practically independent, and can, if he makes occasional visits to the country photographers, travel anywhere entirely independent of the chemical warehouse.

Stripping Gelatine Negatives

THE ordinary gelatine negative may be stripped with a little care, if the glass to which the film is attached is well polished and free from any of those tiny points of roughness that common glass frequently displays; to strip from patent plate is, indeed, easiest. With a pen-knife you cut through the film one-eighth of an inch from the edge, and carefully raise it; warmth will sometimes assist the operation. As the film is scarcely thicker than gold-beater's skin, you must be careful not to breathe upon it, for moisture thus unevenly applied brings about partial cockling, that is afterwards difficult to remedy.

Mr. Plener's method of stripping is, however, applicable to any plate whatever. The negative is immersed in extremely dilute hydrofluoric acid—a few drops to each ounce of water—and as the acid penetrates the film and etches the glass, instant separation takes place, and the film floats off. It can be dried flat by squeegeeing it on a slightly waxed glass plate, from which it separates easily when dry. If a more rigid film is required, a sheet of plain gelatine should be soaked and squeegeed down over the film.—*London Photo. News.*

Accuracy in Measuring.

THE sooner photographers, whether amateurs or professionals, give up guessing at quantities, the sooner will the art of photography cease to deserve the name of the inexact science. It is high time that those giving formulæ cease the use of the word

drop, or give directions for obtaining quantities by the operation of dropping.

In that usually accurate and faultless annual, the *British Journal Photographic Almanac*, we find an article on the comparative size of drops of different liquids. It is stated that twenty drops are necessary to make one cubic centimetre. This is given with the authority, we believe, of Dr. Eder. The authority, of course, is unquestionable; but unfortunately the size of the drop varies with the bottle, the temperature, the angle at which the liquid stands with the neck or the angle made in pouring. Not only will drops vary from the same bottle to the extent of twenty or twenty-five per cent., but with different bottles we can make a difference of fifty per cent. in the quantity obtained in ten or twelve drops. The drop is an utterly unreliable method of measuring fluids, and should be at once abandoned for the measured minim.

Without measurement the photographer will be entirely at sea, and he might as well guess at all his quantities as attempt to measure them by dropping.

We have before had occasion to call attention to the inaccuracy of saturated solutions as a means for determining quantities. Soda solutions vary so greatly between 80° and 60° that no dependence can be placed upon them as a means for ascertaining the quantity in solution. The variation not only amounts to 50 per cent. in the total amount as the temperature falls, but is not uniform at the different temperatures. Saturated solutions of iron sulphate, sulphite of soda and oxalate of potash vary in strength with the temperature and appear to be equally unstable in composition. One method may be employed by the amateurs for determining strength of solutions, which is easy and sufficiently accurate. Take a small bottle, put into it an ounce of water such as has been used in making the solutions and balance it in the scales; then replace the water by a solution the strength of which it is desired to know, and add weights until a balance is again obtained. The extra weights will show the weight of the substance in solution.

A Talk to Amateurs.

DURING a recent trip through the Eastern and the Middle States many amateurs have asked the writer questions in regard to what outfit they should buy, what lenses, and the "general plant," as the engineers say, required for taking pictures. The question of the outfit is a perennial one, and has been answered thousands of times; yet to the amateur it is just as vital, and just as interesting as though no other amateur had ever dreamed of it.

The first piece of advice that the amateur needs is one which is rarely given, namely, that first and foremost in his experiments he must learn to make a negative. He must not try to make pictures; he must not expect to produce beautiful results as soon as camera and chemicals come to hand. We have heard too many pitiful stories, and have had to explain and console with too many disappointed amateurs, not to feel that a great mistake has frequently been made in photographic circles by hiding the fact that there are difficulties in the way of picture making.

The first point being a knowledge of how to make a negative, and our amateur having resolved that he will attain this object before attempting anything further, it is in order to give a little additional advice. The amateur of limited means and mechanical inclination is very prone to say to himself, "I can make a camera and plate-holder and buy the lens, and in this way greatly reduce the expense of photography." To all such we want to say in the strongest possible terms, "don't." The writer has been through this part of the photographic mill most thoroughly, and it cost him in spoiled plates alone the price of one cheap outfit, at least. By all means buy the first camera, lens and plate holder, although you find it necessary to make developing dishes out of wood and paste-board, extemporize your lamp and printing-frames, and all other apparatus. There are so many requirements which are difficult to meet, and failures in any one of them are so liable to complicate the work

of the beginner in learning to make a negative, that the time spent in correcting faults and learning just what is to be done is definitely extended.

The amateur, in looking over the pictures made by his friends, and considering the views which he would like to take himself, will have to decide whether he will pursue landscape or portrait photography. The lenses coming with the ordinary outfits are very well suited for landscapes; exceedingly good results can be obtained with them, and they are quite up to the best work the beginner is likely to produce for a long time. The cheap instruments themselves present on account of their simplicity many decided advantages, and it is not altogether certain that anything more convenient could be devised for them: hence the amateur need have no hesitancy in purchasing them. If, however, he decides the question of what kind of pictures he wishes to take by saying that he wants some portraits, some instantaneous views and not a few interiors, it is necessary to tell him that all these things cannot be done with a cheap lens. The reason why need not be stated here; the fact remains that these lenses are not of the proper kind. One exception, however, may be made. With these lenses one can make a very nice outdoor portrait, but they will not answer in the house. When, however, they are used for outdoor portraiture, the subject can be placed in the shadow or be illuminated by an exceedingly strong reflected light, as, for example, the light from the side of a white building. Under such circumstances it is comparatively easy even with them to produce very pretty portraits or groups of figures.

When the amateur decides to make portraits, probably the best lens for him to buy will be one which belongs to the so-called class of group lenses. These will answer reasonably well for portraiture, especially if very rapid plates are used, and will also enable the amateur when he has mastered the numerous difficulties of the process and obtained sufficient apparatus to take instantaneous views. In selecting a lens of this sort, the amateur's pocket must decide the

question for him, and very frequently this will be quite as satisfactory a solution as any other. The E. A. Rapid Dry Plate lenses are perhaps the lowest in price which can be depended upon for instantaneous work. Next to these we should place the Platyscopes, and following them and *at the head of all lenses*, the Dallmeyer Rapid Rectilinear. With all of these lenses infinitely better work is possible than the amateur is capable of at the beginning; and for a long time he can content himself with the thought that if he had the best lens ever produced by Dallmeyer his work would probably not be in any way superior to that which it would be with an outfit more in harmony with his present capacity.

For instantaneous work, however simple, the amateur needs first of all a knowledge of the art of making a negative; second, he must have taken a sufficient number of pictures to know a good one when he sees it; third, he must be able to judge of his picture instantly—he must anticipate the picture and pull the trigger just before the desired point is reached; in fact, he must in his picture taking reproduce the conditions of “shooting on the wing,” complicated by a variety of other circumstances which are difficult to describe.

Looking back at our own early attempts in making instantaneous views, we often laugh at the failures made and the causes which we assigned for them. Sometimes the shutter was at fault, sometimes the plates; then, again, the focussing, and all these perhaps combined on some unfortunate plate; at least we thought they did. Looking over the negatives and considering the cost in the light of later experience, we come to the conclusion that many a plate which was utterly ruined might have been saved by a little more chemical knowledge, and some of those which were turned out as correct were merely combinations of the most unexpected and improbable accidents.

For instantaneous work it is essential that the amateur be well up in the work of the dark room. And until he has become fairly expert in this he will find his troubles like those of Job, more than he can bear calmly.

Detection of Chlorine, Bromine, and Iodine.

MR. FRANCIS JONES, F.R.S.E., writes: “I have lately introduced a method (suggested to me by the process employed on the large scale for the manufacture of iodine and bromine), which is based on the same principle, but carried out in a simpler and more convenient manner, and which serves extremely well for the detection of the three elements. The process is carried on in the following way: Place a *small* quantity of the mixture to be tested in a good sized test-tube, add a few pieces of manganese dioxide, and then a little water. Add now *one* drop only of dilute sulphuric acid (one part acid to ten of water); a brown tinge indicates the presence of iodine. Boil the mixture, and confirm the presence of iodine by the violet vapors in the upper part of the tube. Continue the boiling till these vapors cease to appear, then add another drop of sulphuric acid and boil again till they cease. If necessary, repeat this addition of acid and boiling until violet vapors have entirely ceased. Now add about two cubic centimetres of the dilute acid and boil again: brown vapors indicate bromine. Continue the boiling until the vapors no longer smell of bromine, then add one cubic centimetre dilute acid and boil again. When the vapors no longer smell of bromine, allow the residue to cool *completely*; add an equal bulk of *strong* sulphuric acid, and warm; a green gas, bleaching a piece of moist red blotting-paper at the mouth of the tube, indicates chlorine. Occasionally some bromine comes off on addition of the strong acid, but if so it is soon got rid of, and is succeeded by the chlorine, which is chiefly evolved on warming the mixture. As, moreover, moist red blotting-paper is far more quickly acted on by chlorine than by bromine, there can be no difficulty in distinguishing between the two elements. I have compared the results obtained by my students when using this and other methods, and find they are far more successful with the new method.”

—*London Photo. News.*

A Card from H. T. Anthony.

IN consequence of the fact that the origin of the use of the vapor of ammonia in preparing sensitized albumen paper for printing has recently been questioned, and also in consequence of the fact that Mr. Ashman has suggested the name of Mr. A. L. Henderson, of London, as the discoverer; and in consequence further of a desire on my part to vindicate by a statement of facts the claim which I have made and still make of being the original discoverer, and the first one to use the vapor of ammonia for the purpose mentioned, I desire to make the following statement:

As early as the year 1858 I discovered a mode of making instantaneous pictures by means of the wet collodion process which was very successful, and in consequence of this discovery the firm of E. Anthony, of which I was a member at that time, went into the business of making stereoscopic pictures. During my investigations for the purpose of finding a quick mode of working, the use of ammonia in connection with the nitrate of silver in the printing of positives suggested the possible application of its use in the same connection in the taking of negatives. The use of the bath of ammonia-nitrate of silver was necessarily impracticable, but it was considered *possible* by the writer to use the *vapor* of ammonia in connection with the bromide or iodide of silver for the purpose of increasing its sensitiveness to the action of light.

The first experiment tried was upon a collodion plate sensitized in the ordinary nitrate of silver bath and most thoroughly washed for the purpose of getting rid, as nearly as possible, of all the nitrate of silver. This plate being exposed while wet and developed with pyrogallie acid gave nothing but fog. Attributing this fog to the humidity of the film, the writer used a plate washed in the same way, but thoroughly dried and subsequently exposed to the action of the vapor of ammonia. This plate, developed with the pyrogallie acid and silver, showed extreme sensitiveness. In consequence of the fact that the collodion was

spread upon a glass plate without substratum, upon being developed and fixed it did not adhere to the plate; consequently the negative was not perfect, and could not be used for printing purposes. Having satisfied myself by this experiment that ammonia could be used for the purposes indicated, I made no further experiments at that time.

The printing of pictures on albumenized paper in the early stages of the art was attended with great difficulty and great uncertainty. This was experienced to its fullest extent by the writer, who had charge of the practical part of the photographic business of E. Anthony. For some time the pictures were toned by means of the old hyposulphite bath, but as this was slow and expensive a change was made to the alkaline toning method as soon as an account of it appeared in Sutton's *Notes*. In consequence of the difficulty in producing good prints by any method of using the silver bath at that time the writer commenced to investigate the causes. He found that when the silver solution was acid, the paper printed very slowly, and the bath became contaminated with albumen. To get rid of this, as far as possible, sufficient ammonia was added to the solution to neutralize any acid that might be present. This made an improvement in the printing, but at the same time prevented the contamination of the bath with albumen. This was a step gained.

The trouble still remained of toning the prints with any certainty of producing good results. In endeavoring to overcome this difficulty the writer had learned by experience that the subjecting of prints, after being freed from the nitrate of silver, to a weak alkaline solution, very materially assisted in obtaining good tones, but its use required so much judgment on the part of the operator that its results were not necessarily satisfactory. The writer was induced to think that the effect produced by the alkali previous to toning was attributable to the fact that the paper during the time of printing was in an acid condition, especially as the albumen with which it was coated was acidified with glacial acetic acid be-

fore being used; and believing that, if the paper after being floated upon a neutral silver bath could be freed from acid, the result obtained would be much better and more satisfactory, the writer addressed himself to the task of finding some means by which to obtain that result. After pondering upon the subject for some time on his way from the factory, where he had been rejecting a large number of prints, and while returning to the store, the recollection of his use of the vapor of ammonia with collodion recurred to him, and he immediately conceived the idea of applying it to the paper. He felt at once that the problem was solved.

He returned immediately to the factory, took a negative box, set it upon end, hung two pieces of sensitized paper inside, and placed a cup with some aqua ammonia on the bottom. He shut the box and left the paper exposed to the vapor of ammonia fifteen or twenty minutes. When printed the result was very different from any thing that ever before occurred. They printed dark blue with bronzed shadows, very much quicker than any prints he had ever made before. They toned very quickly and richly, and when fixed were prints such as everybody now obtains with ammonia. He found then that the problem was indeed solved, and since that day there has never occurred to him any difficulty in making prints upon albumenized paper.

This took place, as far as he can fix it, in the latter part of the summer or the early part of the fall of 1861. With this explanation of the steps which led to his use of the ammonia in preparing albumen paper for printing, he claims to be the original discoverer of the process. If any one else has done the same thing, he is at perfect liberty to make the fact known to the public.

Another important matter in connection with his use of ammonia occurred subsequently. At that time there was in existence in New York, Philadelphia and other places an association of amateur photographers, of which the writer was a member. The tannin process was employed, among others, for taking outdoor negatives. As

all dry processes at that time, the tannin as well, were exceedingly slow, it occurred to the writer to use vapor of ammonia upon the tannin plate, supposing that the presence of tannin upon the collodion would prevent the slight fog that was produced in his former experiments upon the unprotected dry film. The first and only experiment made resulted in an instantaneous picture of a street of New York from the front of the store. This negative was developed with acid pyro. It is thus the first instance of the use of pyro and ammonia in the development of a negative. The result of this experiment was communicated by him to Mr. V. Borda, one of the members of the club, who resided in Philadelphia.

In one of his trials of it Mr. Borda first exposed the plate in the camera, and subjected it to the action of the vapors of ammonia previous to developing. On examining the plate before development he found that the vapor of ammonia had partially developed his picture.

This fact, with my permission, was published by Mr. Borda, and such publication the writer thinks, without any desire to derogate at all from the credit due to Major Russell for his investigations on the same subject, was the basis upon which the subsequent use of the alkaline development was founded.

H. T. ANTHONY.

"A Heap o' Good Advice."

NOT long ago one of the leading photographers of our Northern towns gave a beginner in the profession some bits of advice which might well comfort the hearts of artist photographers generally. The gentleman from whom this advice came has long been noted for the excellence of his art work, while his business successes have caused a vast amount of envy among his professional rivals. In substance the advice was as follows:

"Years ago, when I commenced business, my aim was to produce artistic work. I struggled to make every picture a success from the standpoint of the artist. Every-

thing that I could buy which would increase the artistic power of my gallery I obtained as soon as I had money to purchase. When an individual came in and wanted pictures taken, looking square to the front with white face and black drapery, I expended all my oratorical powers, and the whole of my argumentative force in trying to convince the man that he did not know what he wanted, that he was an artistic idiot, and that he ought to be satisfied with some sort of an artistic thing that he neither fancied nor admired. The result of all this was that I made artistic pictures, frequently displeased my customers, and worse than all the rest, remained consummately poor. After some years of this kind of unprofitable work I came to the conclusion that, as a means of earning a livelihood, running a gallery for love of art did not pay. I therefore came to the most reasonable conclusion a photographer can reach, that is, to give people just what they wanted. If a good composition was possible I would put it in; if not, they should have 'the position of the soldier:' 'Eyes right, head erect, stomach in and chest out,' and without any remonstrance on my part. I also made up my mind that if any one wanted artistic pictures they should have them, and for a consideration, but the consideration should not be subject to competitive prices. Since I ceased to run a gallery for love I have made money. The people who don't want a penny's worth of art come to me to get pictures made at 'ruinous rates.' Those who love art come to me and have pictures made at rates which defy competition, but not in the usual sense, since none of my neighbors would dare to ask such prices as I get. In other words, for plain, straightforward work I have no hesitancy in going in and making the work as cheap as any other photographer in our town; and for good work I charge high prices and give what is wanted, the finest kind of artistic work it is possible to obtain. My gallery is fitted up so that I can obtain anything in the photographic line from the smallest to the largest. With solar work, enlargements or crayons, I do not trouble myself.

When they are wanted, I send the negatives to those who work for the trade, get first-class results, and turn over to my patrons pictures on which I have made considerably more than a 'living profit.' "

These words came from one who in artistic workmanship is excelled by very few of the profession in this country. His cheap pictures, which he facetiously calls "front face, eyes right," etc., are by no means wanting in artistic contrast of light and shade; while the work which he does for those who are willing to pay for a fine thing is simply superb.

The moral is one which is worth consideration with photographers who have long wrestled with their country customers, to get a little art in with the photographs. Learn how to do artistic work and do it when there is opportunity; but when it is necessary to please the customer, do so without a pang of conscience, remembering that the dealer in engravings does not hesitate to sell the common along with the best in order to please his patrons and make a living.

NEW aspects of the copyright question are continually cropping up. The latest is comprised in a somewhat novel point recently raised before the Paris Tribunal of Correctional Police. Some miniature portraits had been photographed with the consent of the artist, and afterwards colored. The art of coloring photographs has in Paris been brought to great perfection, and in this case the copies were so faithfully rendered that they could not be distinguished from the original miniature. A suit for piracy was brought by the owner of the latter, and the Tribunal decided that copyright in a painting extended to every form of reproduction, and that the offering of photographs—though they may be taken with the artist's consent—colored for sale was an infringement of copyright in the picture, and is prohibited.—*London Photo. News.*

TRY DERMALINE.

Photographic Novelties in Boston.

THE season in Boston has been one of unusual dearth in novelties. Up to the time of the holidays the general report was that the number of new things in the market was surprisingly few, and many country dealers who came to town looked around, and went back without buying. They say that old goods and what could be picked up at home would be quite as profitable as such things as were offered. To the stranger, however, there were many good things in the photographic line to be seen on the streets, and the photographer with his eyes open would find many things to interest and amuse him. The instantaneous work on exhibition along the streets was certainly of an interesting character and of a high class. A large portion of it was marine, and what was especially noticeable was the artistic character of the compositions. If boats and steamers had been grouped beforehand the result could hardly have been more artistic. In size, these pictures varied from 8 x 10 down to little ones scarcely two inches in diameter.

Some of the instantaneous landscape work, especially the views in Boston Common, Cambridge, and other watering places, were especially fine.

One photographer did a very neat thing in the way of attracting attention, by keeping a large solar print always hanging on his door, and the subject was usually a child. The negatives were always instantaneous; and as the pictures were not allowed to hang without change for more than two or three days, attention was thus attracted to the door, and something new was always expected. The two most striking of these pictures were a child crying, and a little baby, life size, playing with a rattle and laughing most heartily. Several artists, not professional photographers, exhibited colored photographs at the entrance to their studios. Some of these photographs were taken from compositions made by themselves. Many of these have been widely copied, and some of them were beautifully colored.

An Amateur Outfit.

AN amateur who wishes to take up the study of photography, and has at hand resources that will enable him to cover most of the subjects he is likely to meet in the summer vacation and during a winter at home, ought to be somewhat liberal in his purchase of lenses, etc.

Supposing it out of the question for him to buy more than one camera, his choice will probably lie between the regular amateur size of 5 x 8 and the photographer's size of $4\frac{1}{2} \times 6\frac{1}{2}$. If he has to travel far, and the apparatus has to be carried over portages or long distances into the wilderness, probably the smaller size would be the most suitable.

On the other hand, should he be comparatively fixed in his habits, or move only along lines where transportation is easily obtained, the larger size, and even a $6\frac{1}{2} \times 8\frac{1}{2}$ might be desirable. The writer's present experience would lead to the selection of the Novel, which, all things considered, has proved in the field the most satisfactory instrument he has ever had. The double swing should be undoubtedly preferred to the single, as affording in the end the greatest satisfaction to the operator. So far the selection of the outfit is comparatively easy, and the amateur will find no difficulty in determining upon the size. Supposing it has turned upon a 5 x 8, the next thing to be done is to have suitable kits adjusted to his dark slides to hold $4\frac{1}{2} \times 6\frac{1}{2}$. This done, he will be able to use $3\frac{1}{2} \times 4\frac{1}{2}$, 4×5 , $4\frac{1}{2} \times 6\frac{1}{2}$, and 5 x 8 plates, and thus suit his plates to his view, which on the score of economy is certainly advisable, and if he is travelling also desirable on account of the less bulk required for the same number of the smaller plates.

If there is to be much distant landscape work, one long-focus lens should certainly be selected, say an E. A. view lens. The next lens, which will do for portrait work, may be an E. A. rapid dry plate lens, and this will probably be the one most generally useful both indoors and out. Finally, for interior work an E. A. portrait lens

may be added to the outfit. If the amateur is desirous of doing anything in the stereoscopic line, a pair of instantaneous stereoscopic lenses would be very desirable, and might replace the portrait lens. If a little more money can be expended, the selection might be varied in this way: The long focus lens can be a Platyscope, the short focus lens, a wide angle Dallmeyer rectilinear. These two will probably answer every purpose, although the amateur who can afford it will find that a portrait tube will add to his comfort during the winter months; for, in spite of all his experience with instantaneous plates, he will find the light indoors is not sufficient to enable him to make decent portraits in less than forty-five to fifty seconds. This is too long an exposure for most sitters without a head-rest.

Portrait work is at once the most fascinating and the most difficult. In one respect it is invaluable, as it cultivates the eye in a way that nothing else does, and gives an idea of light and time which is very useful out of doors.

Photography with the Thermometer at Zero.

An amateur friend the other day had occasion to go out to a railroad shop to obtain a negative of a couple of new cars, which had recently been turned out, and of which an acquaintance of his was very desirous of securing a picture. Camera, lens, and dry plate-holders were carried a mile in the hand with the temperature so near down to zero that gloves seemed of no protection, and overcoats and fur caps were like gossamer. Worse than all this the day was cloudy. By the time one exposure was made, which was an interior and took twenty minutes, fingers were all thumbs. The unfortunates who had volunteered to see the affair out were nearly frozen. When the first outside view was taken of the car, the focussing was done by guess, the swing back was employed hap-hazard, and when the cap was fitted such a clog dance as was never seen on the boards of a theatre was commenced, to keep from freezing. The

next negative was to be of a car, little distant; so the camera was set up anew, focussed as well as possible, and all hands made a rush for a switch-tender's cabin, which stood not far off. The door was hardly shut and gloves pulled off before the red hot stove when some one gave a shout, and upon looking out of the window a train was seen backing up. Fortunately it passed the camera, but there was but eight inches to spare between the car and the lens. There was nothing for it but to rush out again, and as the cap had been lost a hat was held over the lens until a car was weighed and pulled out of the way. Just after that an engine and tender ran up in front of the car to be photographed, while the poor shivering amateur stood with his hat over the lens freezing in the cold while some other railroad form was finished. Owing to the color of the car and the fading light a twenty minutes' exposure was to be given, so that the interruptions amounted to very little. Strange to say, when the plates were developed a very respectable set of negatives was obtained. We think, however, that our friend will not again attempt to take negatives in a car yard unless the thermometer stands considerably above zero.

A Modified Ferrous Oxalate Developer.

[From the London Photo. News.]

SIR, — Amongst many modified ferrous oxalate developers I have experimented with during a prolonged series of experiments with developers in general, the following promises so well that I venture to ask you to allow me to submit it to your readers:

To one ounce of the usual ferrous oxalate developer add one drop of a saturated solution of bichloride of mercury. Fully, but not over-expose, and develop as usual. Wash well, and fix. The color of the negative or transparency is a rich, full black with clear shadows. For lantern transparencies on slow plates, the developer has in my hands given most excellent results.

I defer any statement as to the results obtained with other chlorides to a later period.

HENRY POCKLINGTON.

[From our Special London Correspondent.]

FOREIGN NOTES.

The Lighting of the Photographer's Developing Room.—This is just now the main subject of discussion at photographic gatherings, and although it is difficult to abstract the pith of the controversy, it is interesting to note that the main point which has been elucidated since my last letter is the fact that there is an extraordinary diminution of actinic action when the light is properly diffused by such a medium as ground glass or white tissue paper. No glass appears to be thoroughly satisfactory for the developing lamps, if the rays of light can pass directly through it; but some experiments made by the editor of the *Photographic News* show that the ordinary orange glass may be used with perfect safety if the precaution be taken to break up or diffuse the rays by means of a thickness of ground glass. By adopting this system it becomes practicable to develop plates in a room so well lighted that a book or newspaper may be easily read. The details of the experiments referred to may interest your readers.

We took for our experiment a developing room having windows looking into a well-lighted studio, the windows in question measuring 24 inches by 30 inches. These were glazed with a single sheet of orange and ground glass, with the result that the so-called dark-room became almost as light as the studio adjoining.

A plate exposed (covered with a strip of cardboard) for two minutes in this room, one yard from the windows, showed, however, very distinct traces of the action of light.

Half the window was now temporarily blocked up with a deal board, and the other half covered with a second sheet of orange glass. There was now a window measuring 24 inches by 15 inches, of tolerably large dimensions, therefore, which was glazed with two sheets of orange glass and one sheet of ground glass.

A plate was put into a dark slide, and

placed six inches from the window; the slide was pulled up one-third for a quarter minute, and, at the lapse of this time, pulled up two-thirds for half a minute. Afterwards it was developed, one-third of it having been exposed forty-five seconds, and a second third thirty seconds, within six inches of the window; the plate developed clean.

There was no doubt, therefore, that the pleasant yellow light afforded in these circumstances was perfectly safe. In case of a casual increase in the light, a curtain of tammy would, doubtless, furnish any further protection that might be necessary.

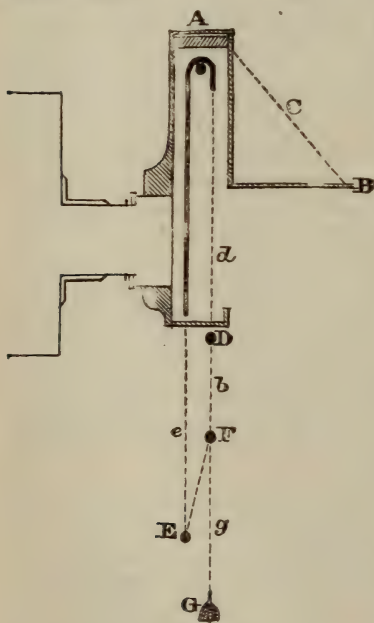
A further experiment may be mentioned, however, which will show how much more light may be employed with a little judgment. The board blocking up half the casement was taken down, and now, in addition to the former window, there was another equally large (24 x 15) glazed with a single orange and ground glass, and admitting therefrom a vastly increased amount of light. A plate was taken out of a dark slide, and a strip of cardboard held against it, at the back of the dark room, at a distance of five feet from the window (where you might have easily seen to read a newspaper), and kept in this way for thirty seconds prior to its development. The experiment, which may be said to resemble the work of a clumsy operator, proved successful, for the plate developed clean. We cannot help thinking, therefore, that for a developing room ruby light is not actually necessary; if your yellow light is too powerful at any time, temper it by adding another sheet of orange glass, or by employing, as in the old wet process, a curtain of tammy.

If the outer light is very intense, or the orange glass is very weak in tint, two or three thicknesses should be made use of.

Celluloid Dishes.—These have been introduced into the trade here by Mr. F. W. Hart, of Kingsland, and the circumstance that they are unbreakable to ordinary usages, and moreover extremely light, will certainly recommend them to photographers. Celluloid has recently been made use of a good deal for photographic pur-

poses. M. David, of Paris, using these transparent celluloid plates as a support for the gelatino-bromide film, while opaque or pigmented celluloid has been successfully employed in Paris for making small cameras and other apparatus. Dishes of calico saturated with celluloid varnish have also been used by Mr. Leon Vidal. It is scarcely necessary to remind your readers that celluloid is a combination of soluble cotton and camphor, and that under certain circumstances it may burn with an inconvenient rapidity, or even explode.

A Convenient Shutter for the Studio Camera.—One may often find a good thing by looking back, and an illustration of this is afforded by the circumstance that an excellent little invention of Dallmeyer which was described in the *Photographic Journal* twenty-four years ago has recently been brought into prominent notice and adopted with advantage.



It consists of a wooden casing, A, which fits on the hood of the lens; and the glass, B, is kept open, when the shutter is in use, by a cord, C; and this glass serves as a shade to the lens. Inside the box, at the

top, is a roller working on points at each end; and over this roller passes the shutter, which is made of thin flexible leather or of wooden strips glued on leather. From each end of the curtain or shutter depends the string, D, E, and the rings, D, F and E, are attached to this string as shown in the diagram. The tassel, G, attached to F by means of a string, completes the arrangement. It is scarcely necessary to say that the strings are attached to one edge of the shutter and not to the middle.

If the string, G, be pulled the shutter is opened, and remains open until either D or E is pulled down, when the lens becomes covered. To give a quick exposure all that is required is to pull down either D or E, whichever is highest. This shutter when well made works almost with a touch, and although not by any means suited for instantaneous outdoor work, is eminently adapted for the studio. One circumstance of its uncovering the lens from the lower part first is no disadvantage in practice; but by elongating the flexible shutter and cutting two holes in it, the shutter can be made to open from and close to the centre.

Photo-Engraving Methods.—Cavity or deep printing plates produced by photographic agency are never likely to come into very general use for anything but expensive work, but that the highest quality of artistic results may be produced by this class of photo-engraving is abundantly demonstrated by the excellence of the prints issued by Goupil & Co. of Paris. Quite recently Obernetter, of Munich, has exhibited prints having all the excellence of Goupil's, and the plates are said to be produced by the following method:

A diapositive is made by the Obernetter method on a plate containing a maximum of silver and a minimum of gelatine, and the film, having been stripped, is treated with a mixture of perchloride of iron and chromic acid, so as to convert the whole of the silver into chloride. This film, charged with chloride of silver, is now placed in contact with a copper plate, and the copper gradually decomposes the silver chloride, metallic silver being liberated. This de-

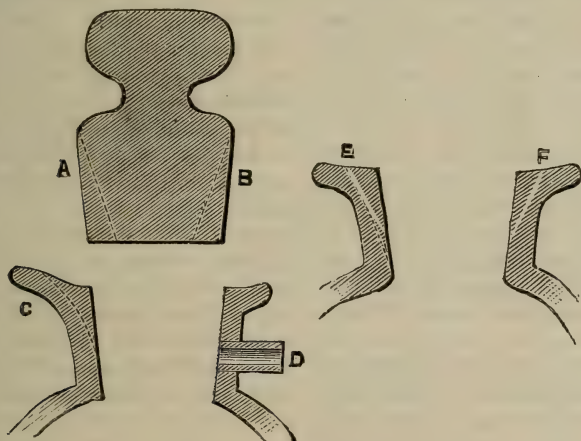
composition of the chloride is of course accompanied by a corresponding etching of the plate.

The new principle now published is an important one, and it has been found that if a collodion positive or an ordinary gelatino-bromide transparency is converted into a chloride picture by suitable means, it easily etches a copper plate with which it is pressed in contact. It has, however, been found that the method described by Mr. E. de Zuccato in the *Photographic News* is the most convenient process for converting the silver picture into chloride, viz, treating with a mixture of dilute hydrochloric acid and bichromate of potassium.

If the film, before being placed on the copper, be moistened with a weak solution of chloride of zinc, the etching proceeds more rapidly than otherwise.

Details of Klic's method also come to hand from Germany, and although it is difficult to produce a very vigorous or deeply etched plate by this latter process, it undoubtedly possesses great value.

A copper plate is dusted with powdered asphalt, and the plate is heated, so that the asphalt becomes nearly melted. A negative carbon print is now transferred on to the copper plate, and the plate, now covered with the negative in carbon, is etched, at first by a strong solution of perchloride of iron, which penetrates only the thinnest parts of the picture; then, by a weaker solution of the same salt, the solution now etching through the thicker parts. By employing more and more diluted solutions, it is possible to etch through thicker and thicker layers of gelatine, so that only the high-lights remain unetched.



A Dropping Bottle—A new and convenient form of dropping bottle arrives from Germany. The stopper is grooved at two opposite points, A and B, the grooves extending about half way up. When it is so placed in the neck that one groove corresponds with the spout, C, and the other with the air inlet tube, D, all is in order for pouring out the liquid in drops; but when the stopper is turned round a quarter of a turn the vessel is perfectly closed. The *Photographic News* suggests that an ordinary bottle will answer just as well, if the

neck is grooved as shown at E and F. The grooves can be readily cut in the glass by means of a small rat's-tail file moistened with oil of turpentine.

Photographers and Artists.—My friend Mr. Baden Pritchard, who, as your readers are doubtless aware, is generally at his best when in a sarcastic mood, has been writing on the subject of "Art and Conceit" lately, and he has told his brethren some home truths. Here is what he says:

"It has always struck us as a curious fact that in the long controversy touching pho-

tography and fine art, and the question whether or no the photographer is an artist, nobody seems to have thought of applying the simplest touchstone of all: Is he conceited? If he is, then *prima facie* he is an artist.

There are no doubt exceptions to this rule, as to every other, but they are very few. The actor, the painter, the poet, the sculptor, the musician, the novelist—all are endowed with conceit; and from the fact that we have not met with many photographers out of conceit with their works, we assert that they have gone a good way to be considered as artists.

And now, having said this, we will go further, and say that conceit is inherent to art. Nor is there any great harm in being conceited, if only you are true to yourself and acknowledge the fact. Charles Dickens once naively admitted in a preface, we think that of *Dombey & Son*, that however kind his kindly critics were, and however great they thought his book, none of them entertained such a high opinion of it as he himself. And so we say that as long as you will but acknowledge your conceit, if it is only to yourself, all may be well, for you carry within you the antidote as well as the poison. How difficult it is to do this only the successful man knows. His works are so loudly commended, his talent so highly vaunted, his praises so widely sung, that if he be young and inexperienced, no wonder he loses his wits and half fancies himself the demi-god the critics make him.

Conceit in artists is due to the fact that they or their works come face to face with the public, and for this reason it is that the actor has usually more of this virtue or vice, whichever he chooses to call it, in his composition. Being but human with his weaknesses, like the rest of us, but subjected more than other people to the insidious influence of loud praise, he feels the result more. Praise and flattery to the tragedian or comedian are the breath of his nostrils; the sole indicator of his success or failure. Can it be wondered at, then, that he will sacrifice all else to obtain them, and that the encomiums repeated again and again should

heighten the estimate he forms of himself? So gross may his conceit become in these circumstances that it loses all power of discrimination; and so long as praise comes, and comes in quantity, there is no question as to its quality. After a while successful, he is no longer satisfied with a modicum of soft-soap; it must be administered by the bucket, and poured over his head and down his back, to approach in quantity what he feels to be his due.

Scarcely less conceited are other artists, albeit the *litterateur* now and then has the advantage of receiving a lesson and of taking it to heart occasionally. He is of the same trade as his critics, and his mind is now and again balanced by brethren in the craft who form another estimate of his work, and tell him what that estimate is in print. In the case of other artists there is no such wholesome corrective, for they are not their own critics. When a good criticism appears, it is acknowledged as only due; when it is a bad one, it receives no attention, since it has obviously been written by one who knows nothing of the subject he discusses. But are photographers conceited about their work? Since they are younger brethren in the world of art, do they not relegate themselves to an humbler position? We fear not. Some years since there was an animated discussion upon the subject of over-praising of pictures at the annual exhibitions. Some half dozen gentlemen spoke very warmly on the matter. They were of opinion that it would be more conducive to art in photography if the criticisms on their pictures were more strict and severe. In a word, they would like to see the pictures at the Exhibition criticised sharply. "Tell us our faults frankly," they said, after the style of the Archbishop in *Gil Blas*, and we shall be only too pleased. And yet of these gentlemen we remember there was one who has not exhibited since that day, and another has labelled his pictures with the announcement that they were not for competition. In a word, these anxious ones desired sharp criticisms—for others. Their position was so well assured—they have been praised so

often and so highly, that criticism could not affect them. Yet try them; take them at their word; act as did Gil Blas to his patron the Archbishop; hint to them as gently and as lightly as you can, after the example of the Spanish hero, and see if the result is not precisely what he found it to be. The man who is so high up, who has monopolized all the praise, who has received the utmost adulation, whose position is assured, is just the one of all others who resents the least word of doubt as to the perfection of his pictures. In fact, he is so accustomed to praise that he shows you picture after picture, study after study, with inviting glances and sententious grunts. He simply does so to ensure a stream of grateful homage from your lips; nothing else is possible. And what is your rôle? You are delighted, enraptured, in ecstasy. Your friend plies you more and more; and as you are so sensible and so 'cute in your judgment, he implores you, if you see a fault, to mention it. And so at last you fall into the trap. Having thus far shown your high appreciation, you think he may be tempted to accept one little word of doubting criticism. The spell is broken. He is off at once; the pictures are collected with a hasty hand and the portfolio is closed; and shortly afterwards he may be heard telling Jones what a fool Brown is, he having actually hinted that the foreground—that fine foreground of brake and bramble in my cottage picture, don't you know?—was too striking, and interfered with the principal idea of the picture.

But surely there are plenty of photographs exhibited year by year which are quite open to criticism, and for which nobody would claim perfection; undoubtedly, although here sometimes the proviso must be made—nobody but the author of them. The author of such humble efforts are those, generally, that need criticism the least, for they are well aware of their own shortcomings and make no profession of being perfect. With them we have nothing to do; they do not come under the scope of these remarks.

(To be concluded in our next.)

Report of the Photographic Section of the Amer. Institute.

NEW YORK, Feb. 5, 1884.

PRES. NEWTON in the chair.

PRESIDENT NEWTON. The first thing in order is correspondence.

MR. MASON. I have received the January number of ANTHONY'S PHOTO. BULLETIN, and a communication from the Society of Operative Photographers, inviting the members of the Photographic Section to be present at a meeting to be held at 392 Bowery, in this city, to-morrow evening. Mr. F. C. Beach will exhibit an apparatus for enlarging of his own invention, and Mr. David Cooper, the demonstrator of the Eastman Dry Plate Co., will exhibit some of his work.

PRESIDENT NEWTON. The report of committees.

MR. GARDNER. *Mr. President, Ladies and Gentlemen:* The programme for this evening is "*Thirty seven Years Behind the Camera*," by Abraham Bogardus, and *Photographic Novelties* by Wm. Kurtz.

The programme for the coming meeting is *Photography as Applied to the Useful Arts*, by Geo. G. Rockwood, and ten-minute speeches and papers on the progress of photography by members of the Section, and others, who are interested in this subject.

PRESIDENT NEWTON. Frequently communications come to me as President of the Photographic Section asking questions, which, as such, are not proper for me to answer. One from North Carolina asks, which are the best dry plates in the market? Now it is not proper for me as President of the Photographic Section to answer that question. I purpose making a series of experiments in conjunction with one of our well-known professional photographers, spending several weeks, if necessary, and going through a course of experiments with all the gelatino-bromide dry plates in the market. The results will probably be given to the public, and undoubtedly be found useful, and save a great deal of money. There are a great many worthless

plates in the market; and they are worse than worthless, for a bad plate costs just as much as a good one, plus the time lost and chemicals used in working it.

I now have the pleasure of introducing Mr. Abraham Bogardus.

Thirty-seven Years Behind a Camera.

In September, 1846, I spent two weeks with Mr. George W. Prosch, receiving instructions in the then new and wonderful process of daguerreotyping.

I paid fifty dollars for instructions and a complete set of apparatus, consisting of a quarter-size camera and stand with three legs, two coating boxes, a mercury bath, a hand buff, a clamp head-rest to attach to a chair, and a clasp to hold the plate while being buffed. With this outfit I commenced business.

To have a daguerreotype taken was the ambition of every aspiring man. It was a great event to most sitters. A black suit, a white vest and thumb in the armhole of the vest, the other hand holding an open book—an attitude of spirit and importance—was considered just the thing.

It was a difficult matter then to make a picture. The silver-surfaced plate, after being properly polished, was subjected to the vapors of iodine and bromine, and after the exposure developed over the heated mercury; and sometimes we obtained a picture, but oftener we did not. Sometimes, after repeated trials, the sitter was told to come another day, as the chemicals would not work.

A sitting required from *forty seconds* to *four minutes*. At that date we all worked by side lights; there was but one skylight in the city, and that was in the granite building on the corner of Broadway and Chambers Street. The light was some six or seven flights up stairs from the street, and was made to revolve, so as to keep the back of the sitter towards the sun. Soon after this most of the fraternity built skylights; then the work improved, sittings being made in much shorter time, and much better effects of light and shade were produced.

The years 1847 and 1848 saw some elegant pictures made. Gurney, Lawrence, Anthony, Edwards & Clark, Brady, Inslee, Becker, Prosch, Plumb, Whitehurst, Lewis, the speaker, and others, made work that beat the *world*. The daguerreotypes made in Europe did not compare with the *Yankee work*!

We were now masters of the chemicals, and produced pictures with certainty, and the time of sitting was reduced to *ten and twenty seconds*. One of our greatest difficulties was to get the plate clean enough to be sensitive in damp weather—the buff used in polishing being filled with rouge, this would attract the dampness; and if the buff was damp a good impression could not be obtained. Many dryers were made and patented to keep the buff dry in any weather. One introduced by Mr. Lewis I found effective.

Thousands of the pictures made at this time are still in existence and are as good as ever. I have some now in my possession that are as good as the day they were made. Sometimes they were covered by a film from the action of the air. This could be removed by the application of hyposulphite of soda or cyanide of potash; one or both properly used will clean them instantly.

About this time a man named Hill proclaimed to the world that he could reproduce the colors in the daguerreotype. This announcement created a great sensation; it was a secret with him and only to be divulged on payment of a round sum.

A meeting of the fraternity was called on an appointed evening at the gallery of Mr. Lawrence, and a committee with full powers was sent to visit Mr. Hill and to report. I think Mr. Gurney was one of that committee. They visited the great discoverer and found him unwilling to show his wonderful products to men so thoroughly posted in the use of chemicals. The committee returned, having seen enough to convince them that his claim was false and his pretensions a humbug.

In making the daguerreotype we went from the wet to the dry process. At first

the bromine was used in liquid form; afterwards, we used it dry, being absorbed by dry lime. And also the iodine was at first covered with water to prevent its evaporating too fast; afterwards we used it dry.

The smell of turpentine in the building rendered it impossible to get an impression. I remember while the building I occupied was being painted outside, the windows being open, I was compelled to stop work until the odor of the turpentine was gone.

I shall always remember with pleasure the good old daguerreotype.

No glass to clean and albenize; no black fingers; few or no re-sittings; no retouching; no proofs to show for his grandmother, and his sisters, and his cousins, and his aunts to find fault with; no waiting for sunshine to print with; no paper to blister, and no promising of the pictures next week if the weather was good. The picture was gilded, finished and cased while the lady was putting on her bonnet; delivered, put in her pocket, and you had the money in your pocket.

I have yet to see the picture made with a camera equal to the daguerreotype. Yet that process, like the photograph now, required great care in manipulation, and only by experience could you make good work.

It was a rarity to hear any person say, "It does not look like me." It was a known certainty that the impression on the plate was a copy of the sitter. There was no disputing the fact. Yet I remember a man saying to me one day, "my picture looks like the *Devil*." I told him I had never seen that personage and could not say as to the resemblance, but sometimes a likeness ran all through families.

After awhile *cheap* workers commenced operations. I once had a hearty laugh in visiting a 25-cent gallery. The ninth size picture was made and inserted in a cheap case for that sum. Sitters paid their money at the desk and received a numbered check. In the skylights the operator and assistant stood one at the camera and the other at the head rest; and that interesting accessory was jammed against the head of No. 13 as soon as he touched the

chair, the plate exposed, and he was ordered to step out and number 14 called. The so-called picture was delivered to him in the next room, and if he had any complaints to make he was told to buy another ticket and go through again.

Among the fraternity there existed a rivalry; jokes were passed and ridiculous things done. Many of the best operators advertised skylight pictures—one man without a skylight exhibited in his show-case a picture of two men boxing, and labelled it "skylark pictures."

One said in his show-case, "notice particularly the eye;" another to ridicule him had a picture of a bruiser with his eye blackened in a fight, and said, "notice particularly the eye." One man had a show-case where he placed pictures that had not been called for, and labelled them "shades of the departed." I knew a man who had made a picture of a sitter with a streaked plate. When asked what made the streak across the face, he told him it was the shadow of the telegraph wire in front of the window.

There were miserable botches then as well as now. An operator came from Williamsburg to have me show him what his trouble was. I coated a plate, and sitting the boy focussed the camera. He asked me if I focussed *every time*; he thought once in the morning would last all day. A man came from Pennsylvania to get a little posted. He said he could not pay much for the information, as he did not work at it only when he hadn't any roofing to do.

We had plenty of trouble then with shirt collars; unless the collar stood X the stylish young gent of that day passed a sleepless night. After trying in vain to suit a man one day, I told him I would take his collar on a separate plate.

I had one old gentleman who often came to me for his picture, but he was never suited. He wore a white choker about five inches high, and his head was far above the level of it. I always tried to get his head down so as to obtain a view of his face without looking up his nostrils; but as soon as I touched the head-rest he would com-

plain of his position not being natural, and up went the head. He is now dead, and I am sure the undertaker had a short job, as he was already "laid out."

Several women came—one with three children, a hobby-horse, a drum and a doll. They wished the children taken in a group. The case selected was the quarter size, for a plate $3\frac{1}{4} \times 4\frac{1}{4}$ inches. The girl, Angelina, was to hold the doll; but the family had not decided as to whether Charles Fredrick Augustus should ride the horse and John William Henry hold the drum, or whether John William Henry should ride the horse and Charles Fredrick Augustus beat the drum. They had agreed to let my superior taste and judgment decide that momentous question. After I had settled that the mother said she did not want the children all close together, as all the "dag-ger-types" was taken. She wanted Angelina in the middle of the room, one of the boys by the "winder," and the other across the room. Well, it did seem a brilliant idea; but how my little quarter-size camera was to reach them all I couldn't see. I tried to explain the capabilities of lenses, the concentration of light, etc., etc.; but she understood about as much of it as I did about the Choctaw language.

I well remember an old lady who after sitting about half the required time raised up both hands and exclaimed—"stop it! stop it!! I winked."

Another old lady after being carefully posed and left sitting while I stepped outside the screen holding my watch and marking the seconds, when I walked to the camera to put on the cap she was standing by the window looking into the street.

The finding of gold in California was a great benefit to the daguerreotypists. On steamer days the gallery would be filled with miners in rough suits, carrying their mining tools and a pair of pistols in the belt. We made several sittings before he left the chair and usually sold them all.

The oldest man I ever pictured was 108; another was 104 years. The youngest child was three days. The *oldest* woman; well, "I never mention it;" and the oldest couple,

man and wife whose combined ages were one hundred and ninety-one.

I have portrayed nearly all the Tom Thumbs and giants of the age. I have made pictures of *four* presidents of the United States, and of one who was president of the Senate and acting-president for a few hours after the death of President Lincoln, until Vice-president Johnson took the oath of office; of governors of states, a great number; of U. S. senators very many; and have even condescended to take a New York alderman once in a while. A case well remembered was to go to the Tombs and daguerreotype a murderer who was to be hanged in a few days.

Once I had a horse to walk up three flights of stairs to be pictured in the skylight. I have taken many dogs and lots of *puppies*, numbers of cats, mostly Thomas by name, a live owl, a live squirrel, and once an OLD HEN; she was *standing* while I made the *sitting*. It was so eggs-act she never came back to "set" again. The plate finally became "foul," was "scratched" and was "laid" aside.

It has been said that working in the chemicals is unhealthy. When I commenced I weighed about 135 pounds; was a slim young man. You can judge whether it has hurt me; I now weigh 190.

Some queer things have happened, as follows:

The difference between full length and life-size. Pat wanted his picture life-size in a four-inch case. When told it would not hold a life-size, then, said he, take it with the legs hanging down.

A mother brought some wax to stick her boy's ears back.

Singular expression of a judge. "Now, Judge," said a friend, "look dignified; look just as you did the last time you sentenced a man to be hung." "Well," said the Judge, "I don't know about that, as the man was reprieved."

I have been praised by many—generally by good-looking subjects—and abused by some who did not happen to be good looking. Many people seem to think we make their looks. I only copy their looks.

"I don't like that picture," said Pat; "me nose turns up and me mouth turns down, and no man has a *voit* speck in his eye."

I have had stout ladies by the thousand who wanted to look thinner, as they were just then stouter than usual, and the same number of thin ones who wanted to be rounded out somewhat.

Often in old Daguerreotype days we used "plumpers," as we called them, a wad of cotton inserted in the cheeks to fill them out.

I have had scores of children willing to sit and been told "what a faculty you have of getting along with the children," and scores who would not sit, and kicked the mother when she tried to force them; and I have been told, "I see you do not have much nack in taking children."

There were any number of patented new things offered for a consideration; patent-mongers were after you constantly, offering wonderful chances to control their pretensions and make a fortune. Sometimes I bought them and generally "burnt my fingers." My distrust of new things may have kept me from investing in some that were good.

I did not buy the carbon process, and think I saved one hundred dollars! I have not been willing to adopt every visionary scheme that is offered, but have stood shoulder to shoulder with the men who have by skill, judgment and work brought photography up to its present standard.

I well remember the first photograph I ever saw. I was told a German lady was making pictures on paper. She was located, if I remember right, either in White or Walker Street near Broadway. I went to see them. They were quite large, I should say 12 x 14 inches, and I did not think such coarse, rough pictures would ever take the place of the clear and elegant silver daguerreotype.

Soon the journals, one edited by H. H. Snelling and the other called *Humphrey's Journal*, published pictures on paper called photographs, and stated that they were first made on glass, and gave the surprising fact

that an unlimited number could be made from a negative. These prints were on plain paper. The albumen surface was not known then.

One by one the daguerreotypists attempted the paper picture; but they were sorry looking things compared with the work of to-day. Soon another new thing came along. A friend of mine just returned from Europe showed me a *carte-de-visite*. It was a little thing; a man standing by a fluted column, full length, the head about twice the size of the head of a pin. I laughed at that, little thinking I should at a day not far distant be making them at the rate of a thousand a day.

Here I should mention the ambrotype on glass—some on the single glass and others put up by sealing two pieces of glass together with balsam of fir. This sealing was patented, and they were perfectly durable.

I also speak of the bromide patents—a terrible trouble to the photographers of that day. The patent was soon to expire, and the owner had applied for a reissue.

A meeting of the photographers of the United States was called and a meeting held, I believe, in this very room. A committee was appointed to go to Washington with counsel and prevent the reissue. Your speaker had the honor of being one of that committee. We went to Washington, and the bromide patent was strangled after a hard fight.

Another serious trouble, as many of you will recollect, was the fixing of a revenue stamp on the back of each and every picture. The cost of the stamps was a large item, and the sticking on. Well, I did not do it myself; I tried a young man, but he was not equal to the task. I then tried a young girl, thinking her tongue could go pretty fast; but she gave out, and finally called in the aid of a sponge.

I claim more for photography than mere dollars and cents, but few of us are paid for our labor. We must show our taste in every picture. Indeed the operator of to-day needs more judgment than in most professions. To stand at the camera and

suit the light and accessories to each varying face and complexion; to be compelled to listen to the ridiculous requests of the Flora McFlimsey's and the exquisite dude, the anxious mother who wishes her crying babe taken with a smile, and the thousand other equally ignorant demands, and all this time to keep a good temper and do the work in the short space of time allowed to each sitter is something that can be done by few. We are compelled to spend much of our time in gratifying the whims of our sitters. Many people seem to think we are to make pictures of them merely to let them see whether they like their own looks.

"Will you sit me until I am satisfied?" said a man to me one day. "No, Sir; I do not know that you will ever be satisfied. I will sit you until I get a good picture of you; but many people are not satisfied with their own looks. If so, how can I satisfy you?"

An old lady with wrinkled face said—"Now, Mr. Burgurdiss, I know I shan't like my picture; I am sure it will look ugly." I agreed with her.

"I had just as leave go to the dentist," has been told me, as nearly as I can remember, nine thousand, nine hundred and ninety-nine times.

A widow from the Fifth Avenue came in a carriage. She weighed 240 pounds and wore a low-neck dress, and had a skin verging on the color of a boiled lobster and face painted. The transaction closed with her telling me she thought the picture perfectly horrible. I thought so myself; it looked so much like her!

Innumerable people here have been tried by all the great artists and they *can't be taken*; at least, they say so. One man said he was tired out in trying; "he could not be taken." I told him I had a camera that would take anybody or anything—man, woman, cat, horse, dog, or even a jackass.

Yet I have known men who seemed too mean to make a shadow.

A high-toned lady from the Avenue came to see me in relation to making a picture of her mother. Somebody had sent her to me. She said her mother had been taken

several times, but had been so unfortunate as never to have had a good one. I requested her to bring the unfortunate pictures with her when she came. She brought two miserable twenty-five cent tintypes. She had been unfortunate.

A woman came blustering in one morning. She wished to have a re-sitting. That picture did not *look like her*; everybody said it looked twenty years older than she did, etc., etc. As she passed up the stairs, the two ladies accompanying her said—"The ugly old thing. It looks just like her; she only wanted to try another dress."

A woman brought her daughter who unfortunately was very badly *squint-eyed*. Her eyes were not mates. "Now!" she said, "if you will notice very particularly you will see she has a *slight* cast in one eye." Well; I saw it.

I must not fail to mention the thousands of intelligent people who knew what to expect in their pictures, and were suited with good ones; and I am happy to be able to say, the intelligent ones are largely in the majority.

Eyes: Only think of the many eyes I have taken. Squint eyes, cross eyes, small eyes, large eyes, staring eyes; eyes so small that they hardly seemed to answer the purpose of seeing with. Dead looking eyes, without one particle of expression, and, oh! how many beautiful eyes.

Mouths: Small mouths, large mouths, crooked mouths; mouths that turned up at the corners. And the many beautiful mouths; sweet mouths that would make a young man smack his lips and wish he would smack hers.

And then the noses: Long noses, flat noses, crooked noses; Grecian noses, pug noses, and many a rum-an nose; and noses so perfect that they gave a beauty to the entire face.

What a variety of characters. One man will have a fine head, intelligence beaming in every feature; and another, a bloated piece of humanity without an intellectual feature, and whose eye had no more expression than the eye of a dead fish.

Let us have more self-respect, and thus give dignity to the profession. Let us work together, and let no man think he is the embodiment of all knowledge. There are other men who know as much or more than you or I. Do not, in using iodine, get idiotic.

We are a body of men engaged in the development of a science. We take the chemical substances of the earth and the sea, and by the aid of the light which God has so bountifully dispensed we copy and fix the image of objects animate and inanimate: the things of life and beauty; the babe with its smile or weeping; the maiden in her youth and hopefulness; man in his vigor and strength; the mother with her dear ones around her; the aged parents loved and revered; all must be pictured and the dear lineaments distributed. We do not stop here: mountain and valley; the city and hamlet of every land; the iceberg from Labrador and the Himalayas towering to the skies; and dearer, the old homestead, or the "cot where we were born." All these make photography a thing of beauty and a joy forever.

I claim a high standard for photography. Is there an eclipse of the sun? photography will trace it second by second and give you a perfect picture of it. Do you wish to see the wonders that surround you? the microscope will magnify the most infinitesimal objects, and photography will picture it, and you can examine it at your leisure.

Do you wish to travel round the world and not leave your own parlor? Photography will give you not only every land from the rising to the setting of the sun, but the inhabitants, too, of every clime perfect before you.

You must have a good light, a good camera, chemicals in order, and know how to use them; but the principal ingredient must be *brains*. Oh! that every man in the profession would try to EXCEL rather than to UNDERSELL.

Photography has been disgraced by making pictures that are unfit to be shown among intelligent and virtuous people. Photography has been used to gratify the

lowest and most degraded desires. I call on every member of this Section to give his influence to put a stop to this curse, this blot upon photography.

We have seen the wonderful improvements made step by step; and who can tell what the next ten years may show us! Franklin caught the electric spark and others utilized it; but it remained for Morse to send it *whispering round the world*. And so with the idea Daguerre gave us; many heads are busy developing it, and ere long some fertile mind will startle the world with its capabilities. "Act well your part."

Whether we use our plates *wet* or *dry*, let not our hearts be *dry* to every emotion of respect for our fellow-workers. If our fingers are sometimes *stained*, let not our hearts be *blackened* by unworthy motives; and while we use the *iron*, let us not be *hardened* by feelings of envy.

I hope just such meetings as this, where we see each other face to face, may be the means of giving us all *higher* and *nobler* aims, and that we may unite to raise our art *higher* and *HIGHER*, until it shall take the place it deserves among the beautiful—it is already one of the most wonderful known to man.

PRESIDENT NEWTON. Mr. Kurtz will now speak on "effect" and "flat tints" in crayon drawings.

MR. KURTZ. I have been invited here for some "chalk talk," and not for a round lecture as my friend, Mr. Bogardus, has delivered, and I am afraid that what I have to say will look very badly in print.

There is a fashion in photography as well as in everything else. We old photographers have seen the oil painting, pastel, the ivory-type, the water color, the india ink, and a lot of other 'types and styles, come and go. The fashionable picture now is the crayon. We made them some twenty-five years ago; but they were never liked, because they were not properly introduced. When Mr. Sarony returned from Europe, being an exquisite draftsman and thorough artist, he executed some fine and extra large charcoal and crayon pictures, which were well liked, and he should be considered as the father

of the crayon portrait of the day. Since that time there is a demand for crayons—all photographers must *make* them; and outside of the photographic gallery there are hundreds of people who produce crayons. The so-called crayon artists have grown since that day like mushrooms. All the parlors are full of crayons; and it looks very much as if the public taste would run again towards color, since the so-called "colored crayon" and pastel is coming more and more in demand. To make a crayon is very difficult, and the principal thing in executing a good picture is to get an "effect," that is, to keep the high lights pure and the shadows rich and transparent. Every artist knows the amount of labor and time it takes to stipple or hatch the background and the drapery deep enough to make the high lights tell on a large portrait.

Some renowned artists use English toned paper, on which one may produce an "effect" more quickly than on white paper, since on a gray sheet you can work the shadows "down" and the lights "up," the gray tint of the paper being used for the middle tint, and the high lights being put in with opaque white.

A number of celebrated artists have used tinted paper with great success. Lawrence, of England, who was called to this country, used this paper exclusively. He drew his heads in lines without using the stump, and has made some of the most charming pictures in the land. If I call him the crayon draftsman *par excellence*, I must call Mr. Rouse, of Boston, the crayon painter *par excellence*. This artist mostly uses tinted paper and models his heads with the stump entirely. Mr. Rouse has a great number of imitators, but none of them can reach him in *technique* likeness or effect.

It is a pity that the photographic artist cannot use this English tinted paper; it is not fit for photography. The beautiful color is entirely ruined by the chemical process, and therefore out of the question for our work. We have to use the white paper, and hence the difficulty in toning down. If President Newton will allow me to light a cigar I will show you how quickly an "ef-

fect" and "flat tints" may be gotten; how quickly you may get three colors with one, and how much labor can be saved.

Mr. KURTZ then put a little irregular lump of cigar ashes on a bit of white paper, filled a large tumbler with smoke and turned it over on the paper and the ashes. After a few moments the smoke had evaporated under the tumbler and had deposited a fine yellow tint on the paper. Mr. Kurtz then removed the ashes and made a quick pencil sketch of a tree and a fence, and the audience saw in a few minutes a little landscape on tinted paper, and the spot where the ashes had been in the shape of a white cloud. (Applause.)

Mr. KURTZ further said: I have tried these smoke tints on portraits, but with no success; the yellow deposit grows darker and cannot be removed or modelled, and therefore I had to abandon it. After years of experiment I constructed the apparatus which you see here to-night, and which produces flat tints of any color and gradation in a very few minutes at the expense of a penny. I might show you now that I can make an exquisite tint on a white sheet of paper without touching the head, or lay a flesh tone over the face without touching the background, or lay a warm tint over the face and a cool one over the rest of the picture, and thereby gain an effect in color which cannot be produced in any other manner. It would, however, take too long, and since the room is very large I will demonstrate for the benefit of the gentlemen at the further ends on something which they can see more easily. Supposing you had to sketch a white horse in a landscape; you would be obliged to hatch or wash the foreground and background "down" in order to get the "effect" of the white horse on white paper. With the apparatus you may do it in a minute. Here is a full sheet of Whatman's paper, which I cover on the edges with a square or oval mat, and here is a tracing of the white horse in question cut out of a piece of ordinary tracing paper. I place it in the center of the Whatman's paper and keep it from curling up with a few pieces of glass or other little

weights. I then take a teaspoonful of ordinary lampblack and a spoonful of yellow ochre or any other color I see fit—these two colors (ordinary house paints)—and throw them into the apparatus by these bellows, which are attached to it. The entire box is now full of dust; and since it is five feet high, the coarse impurities of the colors settle at the bottom, and the finest and best parts of the mixture remain for quite a while in the air at the top of the box.

Mr. KURTZ now opened a lid in the top of the dust box and inserted the stretcher with the white paper for about one minute, after which time he took it out, removed the mat and tracing paper, and held up the stretcher, on which could be seen in a perfectly flat, even tint the white horse. (Applause).

Mr. KURTZ, after explaining the treatment of faces and backgrounds, and the manipulations of putting in high lights with bread, said: "I am quite sure that many of you feel a doubt in regard to the lasting qualities of the tint, being put on in the form of dust. Allow me to illustrate a remarkable fact. You see this large, stiff, bristle brush, the size of a water tumbler, which house painters use to remove the dirt before they put on the paint. You know that if I rub over a crayon drawing with this tool I will spoil it completely; not so with the dust."

Mr. KURTZ took then a white sheet of paper on which he had produced a very delicate tint, and rubbed and brushed it over about a dozen times without disturbing or changing it in the least. (Great applause).

Besides showing a number of fine crayon drawings he also showed some "fotografs" which were retouched by a series of lines done in printers' ink, making the pictures look like fine engravings or wood-cuts. They were done on the Benjamin Day & Goddard machines.

Mr. GARDNER. Mr. President: Mr. Whitney, one of our oldest photographers, is present to-night, and I would like to hear from him.

Mr. WHITNEY. My early days with the photograph and daguerreotype were passed

away from New York, although New York is my native city. In 1846 I went to Rochester and commenced business there, making daguerreotypes. I am not prepared to-night to give you any details about it, but I come to introduce a novelty of Mr. Barnett's, in the shape of a dry plate-holder. I became so much interested in it that I have become the agent for it, and I wanted to show it to you. It is very simple and small. The plate is laid in this cover. The light is perfectly excluded. Mr. Rockwood and Mr. Pach have used this holder for the last three months. That is all I have to say.

Mr. MASON. If there is no other business to be done we would like to hear Mr. Bogardus read his poem—*A Day Under the Skylight*.

Mr. GARDNER. Before Mr. Bogardus commences I would like to state that Mr. Gutekunst, of Philadelphia, has promised to present some novelties. If possible, he will be here at our next meeting.

Mr. BOGARDUS here read a poem, as above.

Mr. GARDNER. *Mr. Chairman*: I move that a vote of thanks be given to Mr. Bogardus and Mr. Kurtz for their very successful demonstrations, which were unanimously carried.

PRESIDENT NEWTON. In reference to its history, I deem it of great importance that there is some one who can go back and tell us what has been done in the past, showing from what photography has grown to the position it occupies to-day. Also the genius who invented the method of making large heads with much less trouble. It is exceedingly useful; and I feel that we are indebted to these gentlemen more than we can express in a simple vote of thanks.

Q. I read some time ago in a photographic paper that a new process had been discovered, by which landscapes can be photographed in colors. I would like to know if this is so?

PRESIDENT NEWTON. I have no knowledge that such is the case, and until I see it demonstrated I won't believe it. You cannot photograph a sensation, and color

is nothing more. Until we can photograph pain, color cannot be photographed.

Mr. COOPER. *Mr. President:* You gave us a formula in which you mentioned that you had tried, in connection with your iodide of mercury, the iodide of sodium. Have you found the iodide of sodium equal to the iodide of mercury as an accelerator?

I have found the iodide of sodium to have a decidedly accelerating effect as well as the iodide of mercury. During my stay in Boston I was asked pretty nearly the same question I am asking here to-night, and I answered it as I have here.

PRESIDENT NEWTON. I have experimented with a great many iodides. I mentioned at the last meeting that the iodide of iron, an alcoholic solution of thirty grains to the ounce, using five or six drops to the ounce with the carbonate of soda developer, produced excellent results, nearly equal to the iodide of mercury. I have also tried the iodide of sulphur (an alcoholic solution), of lime, calcium, lithium and the persulphate of uranium. Lithium forms an almost insoluble iodide. It took at least an hour to fix it in the hypo. The iodide of iron, so far as my experiments extend, if not so potent as an accelerator as the iodide of mercury, comes nearer to it than any other iodide. The coloring properties of the pyrogallol solution, in connection with soda, forms a compound which dyes the gelatine film yellow. I destroyed that dyeing property by ammonia-citrate of iron, as described at our last meeting.

Mr. COOPER. My experience has been that by using four times the proportion of sulphite as of pyrogallol acid I have the color of the negative pure. There is no yellow stain. Much depends on the quality of the sulphite of soda. Out of five samples I found only one really fit for use in development. Four were absolutely valueless, as far as its use in the developer is concerned. I have succeeded in developing plates without any carbonate of soda whatever, using twenty grains to the ounce of sulphite of soda, but it would take ten or fifteen minutes to develop the negatives. There is a very simple test to ascertain whether the sul-

phite is of the kind worth using or not. Dissolve a little in water, add a few grains of pyrogallol acid, and if it turns a bright cherry color that is not the kind. The solution should keep perfectly white.*

Adjourned.

O. G. MASON, *Sec'y.*

Rochester Photographic Association.

MONDAY EV'G, Jan. 14, 1884.

PRESIDENT J. M. FOX in the chair.

After the minutes of the previous meeting were approved, the Secretary read several communications from New York, Philadelphia and St. Louis journals. On motion they were placed on file.

The following new members were elected: H. D. Marks, Geo. Eastman, G. N. Barnard, Geo. Monroe, R. F. Bowdish and H. J. Durgin.

The PRESIDENT in presenting the subject for discussion—*Wet Plates vs. Dry Plates*—said, although his experience had been mainly with wet plates, and he was of the opinion that many operators still favored them, yet there was so many making successful work with dry that the subject was interesting, and he hoped to hear the opinion of the members on both sides of the question, as many strong points could doubtless be brought forward on either side. All would doubtless concede the many conveniences of dry plates, while many good qualities may also be advanced for the wet.

Mr. WARDLAW. In the *Philadelphia Photographer* for January Dr. Vogel says: pictures can be made just as good with dry plates as with the wet plates; but never better. In a certain sense I agree with the Doctor. I have seen, as doubtless you all have, negatives that delineated the human face and form divine perfectly, as perfectly as could be done in black and white; but consider all the points that go to make up those extra fine wet plate negatives. First in importance there is the light. Not only

* See an article on Sulphite of Soda, etc., and Mr. Cooper's letters in connection, published elsewhere.

must we have a good light but plenty of it. Next, the model. A nervous model won't do, or we get an undertimed picture. I am speaking now of negatives of 10 x 12 inches and upwards. Next comes the glass, collodion and bath—all important in making a perfect negative. Now here the troubles with wet plates begin, and the conveniences and superiority of dry plates loom up, for if we are sure our dry plates are right we can go ahead. Granting that as fine results can be made with wet as with the dry plate, still I contend that it is easier for a man equally familiar with each process to make similarly fine results with the dry. Take a large head, for instance, of a child or aged person. Think of attempting a negative of this sort with a rectilinear lens and wet plates. It could not be done, nor would it pay to try it; while that lens is the proper thing to use for such work, and with dry plates a picture of mother or child can be made life-size direct.

Mr. BARNARD. In my travels I have seen a great deal of photographers and photographs, and am decidedly of the opinion that finer work is now being done than formerly with wet plates. Photographers are now learning to work dry plates much more successfully than at first. Having quick plates enables them to secure many subjects they would otherwise lose; therefore they now have fewer re-sittings, and consequently can give greater attention to securing more artistic work.

Mr. NELSON. Does the fact of people being able to have pictures taken quicker increase trade? Do amateurs injure the trade of the professional photographer?

Mr. BOWDISH. In regard to amateurs injuring the trade, I think they rather help the photographer than otherwise.

Mr. WARDLAW. Amateurs can now see the efforts needed to make good work, and by experience find out for themselves that it is not all child's play to reach perfection in photography. When they now see good work they can appreciate it.

Mr. POMEROY. Are dry plates as quickly printed as wet plates?

Mr. NELSON. I think not. They print

much slower than wet plates. I can get off a good many more prints from the wet than from dry plates.

Mr. STONE. I would much rather print from dry plates than from wet plates, provided they are of the proper quality. I am printing every day from dry plate negatives, that print equally as quick as the wet, and with equally fine results; besides, I am able to make better vignettes, as the negatives are now freer from defects than when we worked the old, wet plate negatives.

Mr. BARNARD. Do you think there is any benefit in a yellow negative; do they not take much longer to print?

Mr. STONE. I prefer what are called yellowish negatives, provided they are made thin enough. Oxalate-developed negatives I have usually found rather slow printers.

Mr. POMEROY. If the yellow color that comes from pyro was removed, would the negative make an equally fine print?

Mr. STONE. I think not; the negative could not be made so thin and yet so crisp without that yellowish tinge.

Mr. BACON. If the yellow color is removed, would it not affect the entire plate, thereby changing the quality of the negative?

Mr. WARDLAW. To make a fine print the deepest shadows should be printed down to bronze, or until the bronzed point is just reached, so that the bronzing will show when the print is taken from the press, and should lose the bronzed effect when the toning is done.

To get depth of shadow there should be a certain strength in the lights; the negative must be made so that while the shadows are printing to the proper depth the half-tones are printing just enough, and the high lights are not printing at all. The high lights give brilliancy to the print. Now it does not matter what color a negative is provided it has these printing qualities; it may be ruby, yellow, or blue, for that matter. I have frequently, in the early stages of dry plate work, had to strengthen dry plates with iodide of mercury, which on washing gave a bright yellow color, and these negatives printed brilliantly and quick-

ly; but if they had not had the yellow color the prints would have been flat and grey.

Mr. BARNARD. This subject of color is very much talked of throughout the country; it is a topic of general interest among photographers, and a wide difference of opinion appears to prevail in regard to it. Can it not be demonstrated?

Mr. WARDLAW. If some one will bring me a wet plate negative that is a quick printer, having good qualities, I will agree to make a pyro-developed negative on a dry plate that will print equally fine and quick.

Mr. ZELLER. In my opinion short development is desirable; negatives should be timed just right in the camera; leaving them too long in the pyro developer gives the yellow color.

Mr. BARNARD. I think the cause of most failures is from over-timing, and then the negative is not properly cared for during the development.

On motion the discussion was postponed until the next regular meeting.

Adjourned. W. J. LEE, Sec'y.

THE regular semi-monthly meeting of this Association was held on Monday evening, Jan. 28, 1884, and was largely attended. In the absence of the President the Vice-president, W. S. Nelson, called the meeting to order, when the minutes of the previous meeting were read and approved.

The President having arrived ordered a ballot taken, which resulted in the election of several new members. The Association feel gratified at the interest already shown by the constant increase in membership. The aim will be to make the meetings as practical as possible, in the manner of discussing the various subjects which shall be presented from time to time.

The question-box furnished the following queries, which, having a direct bearing on the subject for the evening's discussion, viz., Dry Plates *vs.* Wet Plates, a general talk followed each question. 1st. What is the best method for reducing strong gelatine negatives? 2nd. Is it advisable to use alum in the fixing bath for dry plates? if so, in

what proportion, and what effect does it have on the plates? 3rd. If only a plain hypo solution be used, how strong should it be made?

Mr. CHAS. H. HOWES, chairman of the question-box committee, said he had lately been shown a plan by Mr. Wardlaw for reducing strong negatives which, for simplicity and good results obtained, was the best by far of any formula he had used. To reduce a strong negative Mr. Wardlaw proceeded as follows: After the negative is fixed, and before taking it from the hypo. to wash, if it be too strong to print well simply leave it exposed to the air with the hypo. still on the plate. In a few moments the desired reduction will have taken place; then wash the plate in the usual manner. (Mr. Wardlaw here exhibited a negative to show the result of the above method, one-half of which was quite strong, while the other half was of good printing quality.) The plate had been treated in the usual manner, except that one-half was exposed to the air, while the remainder was allowed to remain in the fixing bath.

Mr. POMEROY inquired if the washing checked the reduction?

Mr. WARDLAW said it did directly, and no after treatment was needed but to give the negative a thorough washing.

Mr. MONROE. What do you consider a thorough washing for gelatine plates?

Mr. WARDLAW. In my opinion dry plates are seldom washed too long. To eliminate the soda from a dry plate requires at least an hour's washing. A good plan, which I am now using, is to have a wooden box with sides and bottom grooved, made of suitable size to take the plates generally used; fill the box with water and let them soak, frequently changing the water, (say) five or six times during an hour's wash. The hypo. will thus be pretty thoroughly washed out. I am using a fixing bath made in the same manner, which I find works well.

Mr. MONROE said a very fine clearing solution for dry plates is a bath composed of alum and citric acid, a handful of alum in two quarts of water, and half an ounce of

citric acid. This bath will remove any stain produced by the pyro. developer. By using the same formula made stronger, it will reduce strong negatives; moreover citric acid is a valuable agent as a restrainer in the developer, when over-exposure is feared. In case it is found that the negative develops with too much contrast, by using the pyro. without the citric acid the proper detail in the shadows may be obtained. It is well, in that case, to have an extra dish at hand with normal developer, so that no time shall be lost in transferring the plate from one dish to the other.

Mr. HOWES said, regarding the second question, he did not think there is any special benefit to be derived by the use of alum in the fixing bath, unless the plate frills; in that case use according to your own judgment what is needed to prevent it.

Mr. SHELLY. Is there any injurious effect to the negative by the use of alum in the fixing bath?

Mr. WARDLAW. Negatives that are fixed in a bath containing alum in any great quantity are made very hard, and, I think, are more difficult to wash thoroughly. I never use alum, and never have favored using it; but if I found my negatives frilled, then of course I should have used it.

Question third.—Mr. HOWES said the plates will not fix so well nor so quickly in a bath made too strong; a weaker solution works better, and the fixing bath may be used until it becomes discolored. He would not advise using it after the bath grows foul. An old hypo. bath will sometimes produce stains on the negative, caused by particles of other chemicals getting into it. Use the fixing bath only while it remains clear.

Mr. MONROE exhibited two negatives which he said Mr. Barnard made at his establishment. They were developed with his sulphite developer; one was clear, while the other showed green fog in the shadows. He said Mr. B. suggested to him recently that by adding a small quantity of nitrate of silver to the developer before using green fog would be produced.

Mr. WARDLAW. I don't think the green

fog shown in this plate, which is caused by silver in the pyro. developer, is identical with the genuine green fog, which is a chemical fault in some plates.

Mr. MONROE. I am not certain that it is the same green fog which is caused by an overdose of ammonia in the developer; but it is at least a suggestion as to what may be the cause of it in many plates. You will notice that the first plate is quite clear, while the other shows the fog. I learn that the pyro. developer is not generally used in England because of the green fog; the opposite seems to be the rule in this country, as nine out of ten of the American photographers have ceased using the oxalate for over a year, which speaks volumes for our Yankee ingenuity.

The SECRETARY read the following communication from Mr. G. N. Barnard:

ROCHESTER, N. Y., Jan. 28, 1884.

To the President and Members of the R. P. A.:

GENTS: Absence from town will prevent my taking part in the dry plate discussion this evening, therefore I would like to say a word or two on the question in favor of the dry plates and the manner of working them. I wish to state briefly a few observations.

In discussing processes on which many of our best photographers differ in opinion, it would be difficult for me to advance any theory without some practical demonstration or other proofs that would convince any one present for or against either the wet or dry plates.

It is known to most of you that I have been actively engaged in our profession for many years, having begun it in 1842, and have been familiar with most of the improvements in photography from the commencement to the present time; and I now think (taking into account all the photographer of to-day can do with dry plates,) that this is the greatest invention the art has yet seen.

At the last meeting it was stated that Dr. Vogel said recently that as good work could be made with dry plates as with wet, but

never better. I will go a little farther than the Doctor, although I regard his views highly. Still I think better negatives under most if not all conditions can be made with the dry plates. With the advantages of great rapidity over the wet plates you are all familiar. Uniformity in the manufacture of dry plates in the United States can now be relied upon, and they are within the reach of all, and fine chemical results can now be obtained with care in working.

Now to obtain from dry plates the best results, the manner of development must be thoroughly understood; in my opinion this is *all-important*

Within the past few months I have visited many photographic galleries throughout the country, where dry plates of various makers were used, and I found that failures mostly came from improper development.

Quite a number of operators would make a normal developer, and pour over the plate; then let it remain until in their opinion it was done, not taking it from the dish to examine by transmitted light until after the plate was fixed. I don't believe uniformly good results can be obtained by any such mode of working. I hope this Society will take up the subject of development of dry plates for their deliberations at an early day.

With the difficulties of the old negative bath, and the trouble incident to keeping collodion in harmony with it, you are all familiar. Wishing you all success in working the dry plates, I remain,

Fraternally yours,

G. N. BARNARD.

After several changes were made in the constitution and by-laws, the meeting adjourned.

W. J. LEE, *Sec'y.*

Association of Operative Photographers of New York.

{ No. 392 BOWERY,
New York, Feb. 6, 1884.

PRES. CHAS. SCHAIDNER in the chair.

Minutes of last meeting were read and approved. Correspondence read. Three copies of the *British photographic journals*

were received; also one copy of *Philadelphia Photographer*, and one copy of Illustrated catalogue of Photographic Materials issued by Messrs. E. & H. T. Anthony & Co.

The resignation of Mr. Coonley was accepted.

Mr. SCHAIDNER. Mr. F. C. Beach of the *Scientific American* will now exhibit his apparatus for enlarging.

Mr. ROCHE. I would like to introduce to the Association Mr. Bell, Prof. Dudley, Mr. Wardlaw and Mr. Cooper, who are here this evening and will be pleased to say a few words after Mr. Beach.

Mr. BEACH. I propose to make a few remarks on the subject of bromo-argentic gelatine paper, describing some of its uses, merits and advantages, and also show you a simple apparatus for enlarging, which I have designed. The subject of gelatine paper is one of great interest both to the photographer and amateur, and when its uses and advantages become fully known, I predict for it a glowing prospect. The convenience to the photographer in having at hand a highly sensitive printing paper ready for immediate use cannot be over-estimated.

The properties of the paper, its keeping qualities, rapidity and ease of manipulation were fully set forth at a former meeting by Mr. Roche, with which you are already familiar.

I now have my apparatus set up ready for an exposure. As I use nothing but an ordinary kerosene lamp, a longer exposure will be required than usual. I will give it fifteen minutes. The negative was made on a dry plate.

(Mr. Beach here pinned a sheet of Mr. Roche's glossy sensitive paper to the focusing board and took off the ruby cap from lens, beginning the exposure). While this is progressing I will give a description of the apparatus.

Some time ago (having a very weak light for enlarging,) I found it was difficult to obtain a correct focus of the enlarged image because of the dimness of the reflected light. Accidentally one day I happened to hold a piece of ground glass in front of the

camera, and then saw the image much more brilliantly, looking towards the camera through the glass; the focussing was done more easily and quickly. The apparatus I have designed carries out this idea.

[In lieu of Mr. Beach's verbal description we show illustrations of his apparatus kindly furnished us by *The Scientific American*, with a brief description.

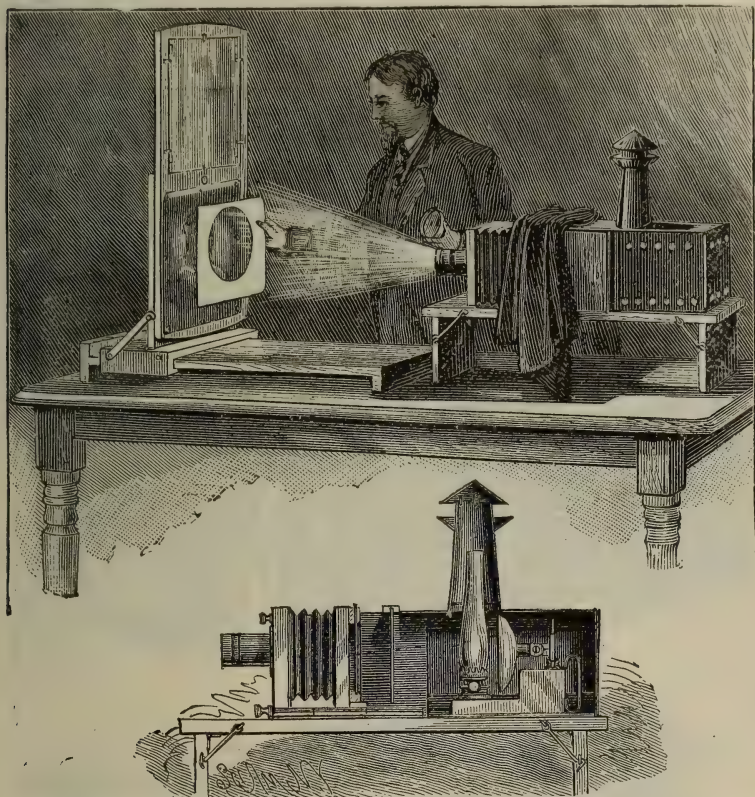


PHOTO-ENLARGING APPARATUS—MAKING THE EXPOSURE.

In Fig. 1 the upper view shows the apparatus in operation. The small illustration is a sectional view of the interior of the lantern, showing the position of the lamp, ground glass, a negative and camera.

With the arrangement as shown, enlarging can be carried on in one room. The focussing screen is made of two boards an inch thick; and the base-board is about thirty inches long by twelve inches wide, raised at each end about an inch to permit of a sliding saddle to move freely back and forth. The saddle is twelve inches long by

fourteen wide, and to the upper side is hinged a frame sixteen inches high and fourteen inches wide, with a square opening twelve by fourteen inches. The frame is held in a vertical position by the flat metal latch. Pivoted at the upper front side of the frame is the focussing board about thirty-two inches long by fourteen wide, so that it is perfectly balanced. At one end covering a rectangular opening is a ground glass about twelve by fourteen inches, with the ground side set flush with the face of the board. To focus, the ground

glass end is turned down and the operator stands behind, as shown in the large engraving in Fig. 2, and moves the vertical board to or from the camera; after focussing the ground glass end is wheeled up, thereby bringing the solid board portion in its place. The picture is sure to be sharp, as both the glass and board are in

the same plane. The sensitive sheet is fastened by pins to the board, and the exposure is made as shown. A cardboard is continually moved in front of the picture to vignetted it. The card may be suspended upon a limber, horizontal, vibrating wire, which can be easily kept in motion. (Mr. Beach showed such an arrangement.)

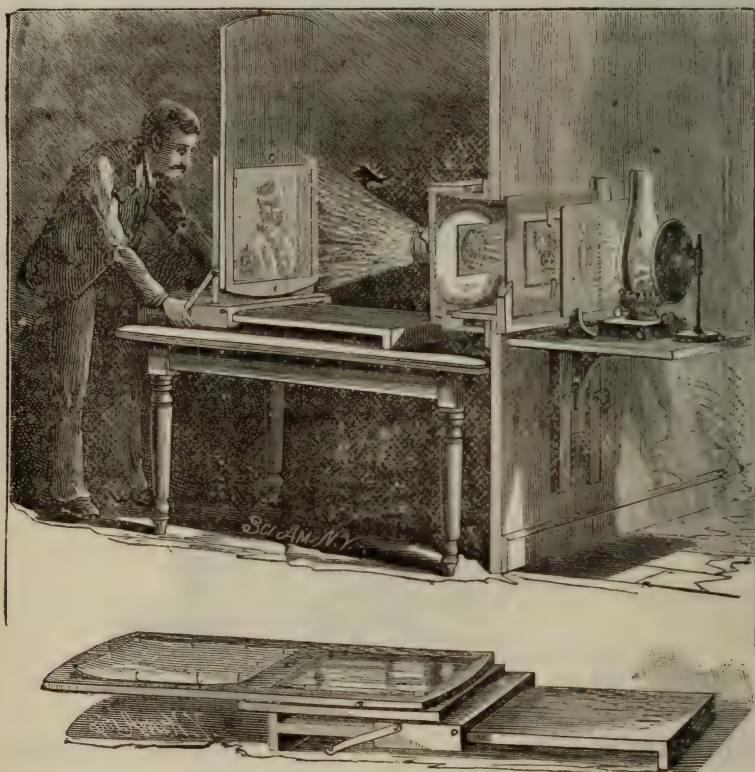


PHOTO-ENLARGING APPARATUS.—OBTAINING THE FOCUS.

Upon a stand in front of the focussing board was placed a 4 x 5 Anthony camera and portrait lens of 5-inch focus, arranged at such height as to be opposite the centre of the lower half of the focussing board. The rear of the camera was rigidly secured by two buttons to two upright side wings about four inches wide by eight inches high, which allowed the front of the camera to move freely. In place of the ground glass was a frame holding the negative, film side

towards the lens, and behind that was suspended a ground glass. A lantern box of tin, about six and a half inches wide, eight high and ten long, holding a No. 3 Leader lamp burner of about 26-candle power was arranged to slide on the base-board between the wooden wings, behind the camera, as shown. The intervening space between the top of the lantern and camera was covered with a black cloth, which allowed easy access to the back of the camera. Mr.

Beach found a tall chimney over the lamp of much advantage, preventing the same from smoking. The size of the enlarged image is determined by moving the lens to or from the negative.

In Fig. 2 the method of obtaining the focus is clearly shown. The small engraving illustrates the folding down horizontally of the focussing board, for convenience in packing or in securing the paper.

In the large engraving the apparatus is supposed to be in the dark room, the camera on one side of the partition and the negative, ground glass, lamp and reflector upon the other. The lamp and ground glass stand upon a vertically adjustable shelf, permitting the light to be easily concentrated upon any portion of the negative.

After making the exposure for fifteen minutes Mr. Beach removed the exposed sheet to a dark box, and stated that he would next illustrate the method of copying drawings and manuscript letters by gelatine paper.

In a printing-frame was a cardboard drawing, upon which was laid the sensitive sheet, the film side away from the face of the drawing. An exposure of one minute was then made one foot away from the lamp. The light was compelled to pass through the drawing and sensitive sheet before it affected the sensitive film. The speaker here compared the extreme sensitiveness of this paper to albumenized, by stating that an exposure of half an hour was required on the latter paper, in bright sunshine, to obtain the same results. A letter was copied by the same light in thirty seconds, and both prints were then successfully developed, the figures of the drawing coming out positive as in the original.

Mr. BEACH then remarked: I will now show you the use of gelatine paper for obtaining enlarged impressions of hand-writing.

I have here a small negative of the signature of Capt. Abney, the distinguished English investigator, made for me by one of your members, Mr Grenier.

Here Mr. Beach quickly focussed the image on the ground glass, about ten times

the size of the original, placed the sensitive paper on the board, gave an exposure of ten minutes, and successfully developed a copy of the enlarged signature. (The value of thus being able to quickly enlarge manuscripts was favorably commented upon by all present.)

The speaker then gave a brief review of the manufacture of the paper, stating that the dull surface common to gelatine prints had by recent improvements been overcome in a measure by the introduction of a substratum of sulphate of barium and gelatine.

He then said. To Mr. Roche, I think, belongs the credit of getting up a finish for this paper which cannot be surpassed. (Applause). I have here a specimen enlargement made by an unskilled amateur upon this paper which is very superior. It was made from a negative of Pach's; the lamp giving the light was enclosed in a soap box, and the development was made in a common wash-tub. The exposure given was fifteen minutes. Several skillful photographers present highly commended the work.)

Some of the uses of gelatine paper are its perfect adaptability for enlarging, its use in observatories for recording the movements of meteorological instruments, its use in copying bonds, manuscript and drawings, its use in microscopic enlargements, for making positive prints, and, finally, its use in enabling the photographer to obtain quickly a positive proof from a *wet* dry-plate negative through the camera, so that he can furnish his customer a proof before he leaves the place. (Applause.)

Mr. ROCHE. There is something very remarkable about this paper. Some which I had exposed beneath different colored glasses duplicated those colors very rapidly, and, strange to say, gave with the ruby glass a crimson or vermilion tint. On fixing in hypo., however, all other colors showed a reduction of silver; but under the ruby glass there was apparently no reduction, and the paper turned white.

Mr. BEACH. The formula I use in developing this paper is a saturated solution (60° F.) of iron and oxalate, one to four, with a slight addition of a (60 grains

to the ounce) solution of bromide of potassium.

The oxalate solution is acidified with sulphuric acid, and two ounces of loaf sugar are added to each gallon of the solution.

I find that commencing with an old developer and ending with a fresh one gives excellent results. I always use a fresh hypo. solution for fixing, and in warm weather employ a separate alum bath directly after the hypo.

Here is a specimen enlargement made in three minutes by daylight. No retouching. When I saw the first specimen I was surprised, and as I could not get such work done here I sent a negative of myself, by Rockwood, to England, where they did it for me very satisfactorily, as you may judge from the specimens shown. I have some paper negatives, which I made last week in the camera, on this paper. The texture of the paper is so fine that it does not show in the positive print. The specimens show oxalate and alkaline development; that by the oxalate you will notice is much the best. I have another specimen enlargement of Dr. Hutinet himself, kindly loaned me for this occasion by Messrs. E. & H. T. Anthony & Co. It was made in six seconds upon Mr. Hutinet's paper. I should also mention that pictures made upon gelatine paper are very permanent; in one article, therefore, we combine speed and permanency.

I thank you, gentlemen, for the kind attention shown me, and trust that I have awakened among you a new interest in this interesting subject.

At the suggestion of Mr. ROCHE the freedom of the floor was now accorded to Messrs. Wardlaw and Cooper, who in the interest of the Eastman Dry Plate Co. were to exhibit some magnificent samples of work on the plates manufactured by that Company, from the studio of the well known and justly celebrated artist Mr. J. H. Kent, of Rochester, N. Y., who now occupies the honorable position of President of the Photographers' Association of America.

Mr. WARDLAW then proceeded to develop some negatives and said:

It is not so much the developed negative I intend to show you, but the method I used in developing these large negatives, and the negatives from which these prints you have seen here to-night were made. In developing I use two dishes, the reason for which you will see as I proceed.

I measure out and put into this dish on my left a normal developer, which consists in this case of water eight ounces, and two drams of a stock solution of pyrogallie acid. This stock solution is composed of alcohol, eight ounces; pyro, one ounce. Next I use a stock solution made as follows:

Conc. liquid ammonia,	. . . . .	1 ounce.
Bromide ammonium,	. . . . .	70 grains.
Glycerine,	. . . . .	1 ounce.
Water,	. . . . .	6 ounces.

Of this I take two drams, and the developer for this dish is complete. This is the Edwards' developer slightly modified, and I always get excellent results with it.

Now in the dish on my right I put eight ounces of developer made the same as that in the dish on my left, and to it I add half a dram of a solution of ammonium bromide one ounce, water six ounces. This we call the restrainer or retarder, but a better name for it would be a strengthening or re-developing solution. I proceed to develop by canting the dish on its side with my left hand and letting the plate to be developed touch the inside edge of the tray, lowering the plate quickly, and at the same time laying the dish down flat and letting the developer cover the plate with one even sweep. The benefit of covering the plate in this way is more noticeable in large plates than on these (5 x 8's). Now as the plate develops I watch carefully, and if it shows signs of over-exposure, the instant enough detail (or, I ought to say, just before enough detail,) shows on looking through the negative, I pass it into this dish on my right.

You observe the shadows are now checked by the extra bromide in this restraining developer, whilst the high lights are strengthening rapidly and the middle tints or half tones are coming along slowly. If you find the middle tints are not coming out enough,

and the negative is inclined to hardness or too much contrast, transfer it immediately into the first or normal developer. The middle tints will not come up so freely as at first, owing to the extra bromide the plate has received from the first developer.

On the change that takes place here in this developer or restrainer depends in a great measure the whole character of the negative. If it is taken out of the first dish too soon and put in the restrainer the negative at once shows signs of harshness; but if the negative is taken out of the first dish and put in the second at the right time (I speak now of over-exposed plates), when the high lights are strong enough the whole negative will be harmonious. If I carry the development of an overtimed negative to completion in the first dish, or add pyro. instead of bromide, I would get strength enough, but it would make one of those thick slow-printing negatives no one wants. On the other hand by using bromide I get a negative with the right intensity, fine detail and a quick printer.

Mr. COOPER, in calling the attention of the audience to the object of the exhibition, spoke substantially as follows: Mr. Beach has called our attention to the admirable process for enlarging on this gelatine paper. We are not confined to the fact that we can make enlargements on paper; we hold within our grasp the possibility of making pictures as large as may be desired, with all the softness and finish of direct prints.

A great many people are under the impression that in our large work a good deal of retouching is required, afterward as well as before printing. This is not so. Very little retouching is done. These were made from gelatine negatives on Eastman special plates, and Mr. Wardlaw is the man to whom we owe the development of the negatives of the remarkably fine prints we have here. Mr. Kent was the gentleman from whose studio we got these samples. These results may be regarded as an exhibit of the work that can be done on the Eastman dry plate. This is a picture of great interest to artists, who like to see light and shade. The portraits were made with a

Dallmeyer Rapid Rectilinear, 21 x 24, with 30 seconds' exposure. I have found many photographers who say, "dry plates are all very well for large work, but for cabinets they are not there." Anything below a 14 x 17 they think dry plates can't do. Now I think these are very fine samples of cabinet work. (Showing them.)

I have been in galleries, and people have come in and made inquiry: "Can you make me a picture with a head four or five inches?" "Well, we can; but you know photographs will fade, and when you pay for a large picture, it is a pretty good price." I generally find out there is no camera suitable for the purpose in the gallery. Suppose you pay a good price for a picture like that, and fire destroys it, you can have a duplicate at half the cost of the original. Of a crayon or oil painting you could not have a duplicate made, unless at great expense.

In making the exposures Mr. Kent always wanted the negatives over-exposed rather than under. They are all from thirty seconds down.

Something of this kind would likely have given a photographer his passport to the Lunatic Asylum some years ago. The time on these babies was about four or five seconds (exhibiting large 20 x 24 negatives). Very little light is used. There is a difference of opinion on the subject of lighting dry plates. The dry plate works with such power that the more uniform the light the more excellent picture you get.

These samples comprised several photographs *life-size* by direct sitting, presenting all the softness, detail and sharpness of card pictures, and finished in the best style known to our art. The pictures having been previously presented to the photographers of Boston and neighboring cities under the charge of Mr. Cooper with marked success, the same method of exhibition was adopted, viz.: The subjects well illuminated were placed on an easel so as to be distinctly visible to all present, and the attention being concentrated the comments on each were heard and appreciated. To add to the interest, after the exhibition of pictures, some

large-sized negatives, 17 x 20 and 20 x 24, were presented to the members, being conveniently placed on a table in the center of the room, and lighted from the back by the aid of Mr. Beach's lantern. The invitation was extended to all who had an interest in the art, and were pleased by what was beautiful in a negative, to pass up one way and down the other, so that all might have the opportunity of seeing without risk of handling.

Mr. COOPER. Mr. Roche has developed some negatives to day with the sulphite of soda.

Mr. ROCHE. I have always understood that sulphite of soda was a retarder or restrainer in the developing solution. To-day I made a saturated solution of sulphite of soda, and on testing with litmus paper it indicated a strong alkaline reaction. By the addition of pyro. only to this solution, I developed an exposed plate.

Mr. COOPER. A very simple method of determining whether you have the right kind of sulphite of sodium is, dissolve a few crystals in water adding a few grains of acid, and if it becomes discolored and muddy in the water you may decide immediately that the sample of sulphite is unfit for developing purposes.

The carbonate of soda and sulphite developer will keep in distilled water. In Boston I made a solution the beginning of the week, in which I combined sulphite of soda, pyrogalllic acid and carbonate of soda. I kept the developer a whole week, and developed eight fine negatives at the end of the week. The solution never becomes muddy.

Mr. ROCHE. Mr. President, I move that a special vote of thanks be tendered Mr. Beach and his assistants for his interesting address and demonstration here to-night; also to our fellow-workers, Messrs. Wardlaw and Cooper, who with harness on their backs have come here and astonished us with the magnificent results made on Eastman's Special dry plates by our worthy President of the Photographers' Association of America.

The motion was enthusiastically carried.

Mr. ATWOOD. I had the pleasure of meeting Mr. Wardlaw on his arrival in the city, and learned from him that the Rochester Photographic Association was formed with the same object as our own. We would like to hear a few remarks from him.

Mr. WARDLAW. The Rochester Photographic Association is as yet in its infancy, but is growing fast, and is a very promising child. We have not had many meetings so far, but on each occasion we have added new members, and a growing interest is evidenced.

Meeting as I have since my arrival in New York such a warm photographic greeting, it has occurred to me that it would be an admirable thing if the photographic societies now established, and others that may come after, were made intimately acquainted with the aims and objects of each other, so as to conduce to the greatest advantage of the whole by the interchange of the valuable experience of members of each body.

A matter of importance, too, which cannot be overlooked, is the value of such co-operation in securing employment for members who are temporarily unengaged, and making known the wants of employers who need assistants. Several inquiries and applications of this nature have been presented to our Association, which would probably have resulted more satisfactorily had our information on this point been greater.

A pleasant social intercourse could also be established, so that visitors in the various cities would feel more at home, by reason of the fact that the Association to which he belonged was well known to that of the city visited.

Returning you many thanks for your generous welcome, and with the hope that it will be my pleasant lot to give you an equally hearty one when you come my way, I will bid you a *very good night*.

The meeting then adjourned.

A PARISIAN photographer advertises his business in five languages. The English version reads—Children executed instantly.

The Coming Convention of the P. A. of A.

THE Annual Convention of the Photographers' Association of America will be held in Music Hall, commencing on the morning of the 29th of July. Nothing definite has transpired as to what the Executive Committee will do, but we are assured the

best talent of the fraternity will be brought out and practical demonstrations in photography will be given. As soon as possible a full programme of the proceedings will appear, and also an article descriptive of the desirable places and objects of interest in that neighborhood that may be photographed, for those who wish to employ their cameras.



There will be ample room for every photographer in the United States to make a good exhibit, and plenty left for the exhibition of apparatus, frames, accessories, etc., and other things of interest to the fraternity. Dry plate manufacturers will have

every accommodation. Music Hall is very centrally located, and one of the finest buildings in Cincinnati. Everything promises well for an unusually interesting and profitable convention. Yours fraternally,

LEO WEINGARTNER, *Sec. P. A. of A.*

A Correction.

MR. WM. M. ASHMAN, in a communication to the *British Journal of Photography* for Jan. 25, 1884, page 62, says:

"I think it is due to the photographers of this country (England), for me to say that I took my first lesson in fuming paper from A. L. Henderson, of London Bridge, as far back as 1863—three years before the publication of the *Silver Sunbeam*."

I beg to inform Mr. Ashman that the first edition of the *Silver Sunbeam* was published in Dec., 1863; also that Mr. H.

T. Anthony's mode of fuming sensitized albumen paper before printing had been published in this country and was in use for several years prior to the issue of the above work.

T. C. ROCHE.

A PROMINENT photographer, who uses large quantities of our gelatino-bromide rapid printing paper for enlargements, writes as follows: "The rapid gelatine paper works very nicely, and we find it of very great benefit for enlargements during this dull weather."

Requisites for the Alkaline Developer.

EVERYONE knows that the excellence of the resulting dry plate negative depends greatly upon the purity of the ingredients used in the developer. One of the principal formulæ for the alkaline development is composed of sulphite of soda, pyrogallie acid, and carbonate of soda. See page 31 of January No. of the BULLETIN.

It has been found on careful trial by the most competent judges that the pyrogallie acid and sulphite of soda bearing the trade-mark E. A., of which we give a facsimile below, is superior to any other.

Mr. David Cooper, well known to all photographers as one of the most experienced instructors in dry plate development, speaks of these important chemicals as follows:

PHILADELPHIA, Feb. 16, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gentlemen: I have tried the pyrogallie acid I got of you last week, and find it excellent. No failure in development can be attributed to it, as its action is simply perfect.

It needs less to develop a plate than any other hitherto used, being apparently stronger. It keeps well when combined in solution with your NEW SULPHITE OF SODA. Good luck to it. With respect, yours,

DAVID COOPER.

NEW YORK, Feb. 7, 1884.

MESSRS. ANTHONY & Co.

Gents: The sample of soda sulphite received of you I have tested with care, and it affords me great pleasure to state that it is all that could be desired for developing purposes.

I have had the opportunity of testing all the samples in the market, and must say that such variable and unsatisfactory results were obtained that it was refreshing to be able truthfully to exclaim, *Eureka!* after the first trial of yours.

Very truly,

DAVID COOPER.

Mr. Cooper is the demonstrator of the Eastman dry plates, and his testimony can

be implicitly relied on for the purpose. As he is so well known to the fraternity, it is unnecessary for us to add anything further.

Be careful to notice the trade-mark.



The pyrogallie acid is put up in one ounce bottles and is sold for 45 cts. per ounce.

The carbonate of soda (crystallized,) is sold in 1 lb paper boxes at 12 cts. per lb.

And the sulphite of soda can be had in pound or half pound bottles, as desired.

$\frac{1}{2}$ lb, including bottle, . . . \$0 20

1 " " . . . 30

E. & H. T. ANTHONY & Co.

MR. GUTEKUNST, of Philadelphia, has had on exhibition during some weeks past a colored photograph of a most remarkable character. From a photographic standpoint it is quite as remarkable as from the artistic. It is a pastel group, the sight of the picture measuring 52 by 70 inches. The print was originally about 84 inches in length, but was cut down on account of the height being greater than was artistically necessary. The subject is a group of three children who are represented life-size. The foundation for the artistic work was a monster platinum print, which possessed the artistic value of giving pure black and white tones as a basis. The pastel work has been most admirably performed, and the faces are as exquisite as any water color miniatures, which they greatly resemble. All three of the faces are said to be perfect likenesses.

The Ruby Lamp Signalled.

THE ruby lamp has been exhibited, and evidently intimidates some of our Western friends. It is quite amusing to read how seriously some of them express themselves through the organ of *The Eye*, if not otherwise. In true newspaper fashion, Mr. Gentile has interviewed the prominent photographers of that city, with the following result:

Mr. Rocher, whose pictures have been much admired, thought there was no cause for alarm. He had been an amateur himself once, and it took him some time to attain celebrity.

Mr. Brand imagined the Melander Bros. had struck the key-note; and that the dissemination of photographic lore to purchasers of \$50 equipments was baneful. The time was ripe for combined resistance to the encroachments of these "would-be" artists.

Mr. Joshua Smith had not the least objection to the *genuine* amateur, be one in the masculine or feminine habiliments. A lady amateur of the West Side had recently made some very creditable work; but he objected to stock dealers trying to make Tom, Dick and Harry believe that with an investment of ten dollars they could go ahead and start in the business, make headless and tailless animals (at the "Zoo"—no,) at the State Fair, and then have the "gall" to go round and see what the professionals would print them for *by the thousand*. The stock dealers should draw a line somewhere—(possibly a headless or tailless one); but, however, a good result would inure to the photographer if people of means took to the art with a desire to become *artists, for the love of the beautiful*.

That old practitioner, Mr. A. Hesler, surveys the field from a different standpoint. He was in favor of the public being at liberty to learn all they desired of the photographic art, but thought it a great mistake for a dealer in photographic supplies to keep a man to show every one *who bought an outfit* how to make views and operate, free of cost.

Mr. Mosher expressed the opinion that the professional would stand higher in the estimation of the public in consequence, and that if he could find an amateur who could make better portraits than his operator, he would induce him to accept the position as chief of his establishment.

Another professional, not a leading one, involuntarily heard some criticisms of his work, that were not altogether flattering, in comparison with the amateur's own new-fledged powers, and he was "down" on them, and would not patronize the same dealer. Another on Clark Street thought they (the amateurs) would be a curse to the fraternity.

One dealer had issued a circular stating that "our amateur outfits are *not toys*, but good and *practical* photographic apparatus, such as are constantly supplied to professional photographers."

Mr. Gentile concludes by saying that no doubt a better feeling would exist had the amateurs been willing to admit the professional on an equal footing with them at the meetings of their club, and expresses the Darwinian conviction that the final result of this controversy will be the survival of the fittest.

There is a raciness in their discussions, and a peculiar frankness in the criticisms of our Western friends that is positively refreshing.

A Curiosity.

A GOOD photograph of a curious subject comes to us from Atlantic City. A three-masted schooner from Madison is seen safely deposited on *terra firma* with all its sails set and sitting straight upon the beach, absolutely surrounded by *land* on every side. The vessel was lifted by an immense wave, said to be forty feet in height, and squarely *left* in repose on the bosom of dear Mother Earth. The enterprising skipper seeks to mitigate his misfortune by admitting the public to his deck, which is reached by ladders, for the sum of twenty-five cents a head. He is doing a thriving business, and has netted forty dollars from his visitors in a day.

Electric Photographs.

AN important announcement comes from Cleveland that Mr. E. W. Fell of that city has fortunately made a successful discovery by which photographs of a peculiar softness and artistic quality are secured, it is said, through the instrumentality of the electric spark. Those who have seen the results speak of them highly. The pictures are thought to be permanent, and can be made on almost any substance having a smooth surface, are very inexpensive, and peculiarly adapted to the purposes of the lithographer and wood-engraver. From the first report it was supposed that this surprising novelty would utterly revolutionize the business of ordinary photographic portraiture; now it is intimated that it is not so intended. Only twenty or thirty seconds are required for their production.

In the latter respect, if the statement be true, the process is not so remarkable, for by the invention of Mr. Grenier, to which we have heretofore alluded, an impression can be made in three seconds.

The Sensitized Paper Hanger.

IT is often observed how very useful a simple invention may be, when once introduced, and how strange it was that no one had thought of it before; the Wheeler paper hanger is one of these. Such a convenience cannot but recommend itself. There is just the least little knack in using, but once mastered, no one will dispense with it. They cost but fifty cents per pair and never need repair.

From the Extreme Northwest.

Two very interesting cabinets have come to us from the extreme Northwest. They bear the imprint of Peterson, New Tacoma, Washinton Ter. One of them represents a little girl seated with her pet fawn, and the other apparently a happy groom accompanied by his bride, the latter arrayed in spotless white. Better photographs we may have seen, but many from noted hands not half so pleasing.

Wagner's Retouching Cylinders.

ON another page will be found the advertisement of Mr. Guenther Wagner's Retouching Cylinders for spotting and retouching photographs.

These are now used by the leading photographers and artists, among whom are Sarony, Kurtz, Mora, Hecker, Mounier, etc., in preference to India ink.

Stamp Portraits.

MESSRS. DOUGLASS, THOMPSON & CO., of Chicago, have sent us a circular announcing a novelty for sticking on cards, letter-heads, etc.

Cabinet photographs of any individual or subject may be sent to them and in ten days the stamp portraits will be returned. They have somewhat the appearance of an ordinary postage stamp, are about the same size, and similarly gummed and perforated.

Walzl's Monthly.

MANY of our readers may not be aware that Mr. Walzl now publishes his journal in the form of a paper, issued monthly. The February number is before us, well filled with miscellany, "ads," and information of general use to the photographer. If you have not seen a copy, send for one.

For the First Time in Three Weeks.

ABOUT 11:15 of Wednesday, Feb. 20th, the sun actually pierced the sombre sky and gladdened the eyes of mortals with glimpses of his pristine splendor. Suddenly a significant rumbling became perceptible, increasing in violence until it resembled thunder or the rattling of a battery of field artillery. General curiosity was excited to know the cause, and investigation proved the din to be due to the photographers, who with one accord and five hundred and fifty thousand strong were rushing skyward with their printing frames everywhere throughout the land.*

* Not copied from the *Burlington Hawkeye* nor the *Texas Siftings*.—ED.

The Egyptian Colors.

By referring to our new catalogue, which no doubt every photographer has, a list and description of these exceedingly popular colors will be seen. They are neatly arranged in substantial wooden cases of three sizes, the middle one, or No. 2, being that more generally selected. These are largely in demand by the public, especially the ladies, who use them in making the so-called Egyptian crystal photograph, and are sold by many of the fancy-goods houses for that purpose. Quite lately we had the pleasure of witnessing their application, and can speak favorably of the result. The No. 2 boxes contain nine half-ounce bottles of the more necessary colors, and costs \$2 50.

The Chicago Photographic Societies.

THERE would seem to be a little "winter of discontent" among the photographic associations of Chicago. As it stands, however, the President and Secretary of the professional branch and also the President and Secretary of the amateur are one; and a rather serious desire seems to pervade the regulars to "start" another. When the professionals drop in on the amateurs, however, as they often do, they have no vote.

Death of Mrs. Theo. Lilienthal.

FROM the N. O. *Picayune* we learn that Mrs. Theodore Lilienthal, the beloved wife of the eminent photographer of that city, has passed away. She had been a great sufferer for many years, enduring with singular fortitude, and bore a very exemplary character. Her sympathies were ever with the destitute and the unfortunate, who have sustained a heavy loss.

A MR. HENRY WOYL, of Philadelphia, is said to have a collection of two thousand portraits of criminals. As a novelty these might "draw" at the next Convention in Cincinnati, if the fraternal city could be induced to part with them for a season.

Chicago Amateur Photographers' Club.

A COPY of the Constitution, By-laws and Rules of Order is received. It will meet on the third Monday of the month; Dr. H. D. Garrison is President and Mr. F. H. Davies, Sec-Treasurer. Applications for membership are referred to an Executive Committee. If approved by the Committee, and two-thirds of the membership, the applicant becomes a member on remittance of the yearly dues of one dollar, payable in advance.

Our Illustration.

THIS month we have the pleasure of gratifying our readers with some charming subjects made by the Messrs. Pach in the neighborhood of Elberon and Long Branch. We should have liked to have distributed "one apiece all round" of the villas, so pretty are they.

The negatives were made on Eastman's Special dry plates, and the prints by Messrs. Pach Bros. on our Extra Brilliant N. P. A. *Pensé* albumen paper.

The Prosch Instantaneous Shutter.

WE shall have the pleasure of presenting a novelty in instantaneous shutters, invented by Mr. Cyrus N. Prosch.

The inventor is the son of Mr. George Prosch, who was the first manufacturer of Daguerreotype or photographic apparatus in the United States. He it was who made the camera for our Mr. E. A., which was used in making the daguerreotypes for the Government Survey in 1841 of the North-eastern boundary.

This instrument (a patent being applied for,) is made attachable to the brass work of the Dallmeyer rapid rectilinear and other lenses. It will soon be ready for the market, when full particulars of it will be given.

THERE are rumors of another French photographic journal, to be called *Le Progrès Photographique*. The editor will be M. Leon Wulff.

Another Magnificent Gallery of Art.

FROM the Mobile *Weekly Item* we learn that Mr. C. Barnes, of that city, is installed in his new and magnificent gallery of art. We must congratulate Mr. Barnes on the event, who after forty years incessant service evinces so much enterprise and activity.

Mr. Barnes is probably the oldest photographer in America, that is to say, no one living has practiced the art for so many years; and, as far as we know, Mobile has always been his chosen field of labor. The building was constructed specially for the purpose, is furnished luxuriously, and possesses all the requirements of a modern establishment of its class.

Fancy Embossed Bon Ton Envelopes.

FANCY embossed bon ton envelopes are in course of preparation. They have a decidedly neat and pleasing appearance, and will be very acceptable as a change from the variety long in vogue. At present they can be had in two tints of blue or pearl color, and with arch openings. Eventually they will be made with oval openings also, and in assorted colors. Price, in enamelled paper, \$10 00 per 1,000.

ONE of the Chicago dealers says, in allusion to the Western floods, that he is debating the question of canal boats for the transportation and exposition of his wares at the coming Cincinnati Convention. Another, who has the disadvantage of doing business there is quite hopeful, and says the water has already receded to the chin, and that by the time it reaches the vest pocket he expects to regain his equanimity entirely.

A Beautiful Portrait.

MR. J. F. CONLY, successor to Warren, of Boston, sends us a beautiful cabinet portrait of a little girl, dressed *à la* Mother Hubbard. The subject and rendering are both faultless, and we hope some day to share the pleasure of its company, in the form of an albumen print, with all our readers.

A Beautiful Town.

THE amateur who is seeking for beautiful bits to ornament his album will find Wilmington, Del., a most admirable ground for his camera. The city is full of most charming residences, hidden nooks with backgrounds of foliage, and distant views which are really unsurpassed. The city itself from an elevated stand-point—the top of a building or a hill—presents many beautiful features, while from the opposite side of Christiana Creek, it affords views which are exceedingly picturesque; while the Brandywine, distant only fifteen minutes' walk from the hotel, with the ruined mills at its mouth, form spots which are suited to almost every lens that the amateur is likely to have in his outfit. The country round about in the early spring is most delightful, and it would almost seem as though a blind man could scarcely fail to find points which would make most charming pictures.

One of the largest manufacturing establishments in Wilmington, Delaware, the Harlan & Hollingsworth Co., have opened recently a photographic department in their works. Beside the ordinary 5 x 8, they have a 20 x 24 camera, with baths, etc., to match. The dark room is fitted up with every convenience, and every class of work from the smallest to the largest is likely to be utilized by the firm, whose previous use of the photographic art has probably been as extensive as that of any other firm in the country. They have an immense number of photographs of steamers and other works, all of very large size. Their photographic studio will doubtless be found of great convenience, and will enable them to take large numbers of views, which had they to wait for professional photographers they would be unable to get.

Our New Camera Works.

OUR new camera works are again in running order, and we shall soon be enabled to supply the spring trade with an absolutely new stock of the most approved apparatus.

Facts and Fancies.

AN Association of Amateurs is about to be formed in Cincinnati.

Mr. Stevens, formerly with C. F. Rice, now wields the pen for N. C. Thayer & Co.

H. J. Thompson and family are seeking health and pleasure at Bay St. Louis, near New Orleans.

D. B. Sweet, formerly with Douglass, Thompson & Co., is now with N. C. Thayer & Co.

Mr. Sherrard, formerly with Douglass, Thompson & Co., has taken charge of the stock department of C. F. Rice.

Mr. J. F. Ryder is on a trip eastward, to pick up the novelties of the season, and exchange greetings with hosts of friends.

Carbon printing still engrosses much attention in Germany. Dr. Liesegang has recently issued another edition of his work on that subject.

Mr. Gentile, of the *Eye*, has recently made some fine gelatino-bromide prints, and promises to publish at an early day the entire *modus operandi*.

Mr. I. N. Brush, of Bowling Green, Ky., had the misfortune to swallow by mistake a spoonful of liniment largely composed of aconite, instead of a tonic. His condition was very critical.

Herr Obernetter is out with a new photo-engraving process, the results of which are said to be remarkable, and have created a lively stir among photographers of the Eastern Hemisphere.

Herr Goltzsch has just exhibited before the Berlin Association a peculiar stereoscopic camera of his own construction, the lenses of which were supplied by an opera-glass. Pictures were also shown.

A new firm will soon be formed in Chicago — T. W. Pattison, late with H. J. Thompson, and J. A. Smith of Quincy, under the firm name of Smith & Pattison. No doubt they will command a large trade.

Mr. Geo. V. Hennies, of Columbia, S. C., lost his gallery by fire on the night of the 21st of January. Before this appears in print we trust he will be re-established and rejoicing in renewed prosperity.

The managers of the Dealers' and Manufacturers' Association met in Chicago a few days ago, and also the Special Committee of Manufacturers of Dry Plates, consisting of Messrs. Carbutt, Cramer and Eastman.

A celebrated photographer of the old world naively remarks that on his recent tour of circumnavigation *en route* to San Francisco he learned the most fascinating art of "poker," the complete course having cost him but fifty dollars.

Salt Lake City does not seem to have lost all its savor. Mr. Savage of that city has announced the purchase of a number of immense backgrounds, in order to accommodate the unusually large family groups he is sometimes called upon to make.

Mr. Stauffer, the Asbury Park Photographer, has resolved on extending his facilities for business, and will at once erect a large building, 38 x 40, at the lower end of the Excursion grounds, where he hopes to locate an establishment superior to anything on the coast.

Mrs. C. H. Codman, of Boston, we are given to understand, will continue the business of her deceased husband at his former well known quarters. Mrs. Codman has the sympathy of every member of the craft, who will join us in wishing her an abundant measure of prosperity.

The firm of David Tucker & Co., which has been in existence in Buffalo ever since 1850, has grown steadily in importance until it ranks among the leading commercial houses of that city. The excellence of their stock, including many if not all of our manufactures, and close figures, has enabled them to defy competition, and build up a large and successful business. Mr. S. B. Butts has long been identified with the concern, and is very popular in the trade.

C. S. Roshon & Co., whose name has long been familiar to the residents of Harrisburg, Pa., and vicinity, have within a few months past taken possession of their new quarters at No. 320 Market Street, in that city. They have two skylights, and one of them is so arranged that ladies in costume can be photographed in greater privacy than is the case ordinarily. A specialty of the firm is the linograph, life-size pictures on linen, for which they hold the American patent.

Amateur Photographers.

AT a meeting of the Chicago Amateur Photographic Club, the President, Prof. H. D. Garrison, read an interesting paper on the light which was most suitable for a photographic dark room. To test the question, he had performed some two hundred experiments, and the result shows that a ruby red gave the most satisfactory results. Mr. John Carbutt, of Philadelphia, exhibited a method of preparing a dark room lantern slide, using pot-metal, copper color and red. He also showed a new process of enlarging photographs by using gelatino bromide films on paper. Prof. S. W. Burnham exhibited the detective camera. The last instrument offered was a combined field-glass and camera, which also takes instantaneous views, the latest French invention in photography, and regarded as a model of artistic workmanship. Many Chicago photographers of note were present, among others Messrs. Gentile and Davis, who took charge of some of the experiments.—*Exchange*.

Our Visitors.

MESSRS. EASTMAN and Monroe, two dry plate manufacturers of Rochester, have favored us with a friendly call since our last issue, and also Mr. Cope of Philadelphia, Mr. J. F. Ryder of Cleveland, and Mr. J. P. Bass, of Bangor.

M. M. Gallet, the representative of the great house of Blanchet, Frères & Kleber, manufacturers of the celebrated Rive photographic paper, has braved the dangers of

the Atlantic at this inclement season to confer with his transatlantic customers, who have been generous patrons of that house.

Pearl Paste.

EVERYBODY seems to be delighted with Pearl Paste. It is so handy, so adhesive and so sweet, that many have already found it indispensable.

We are now putting it up in wide-mouth bottles, and pints and quarts are just ready for delivery.

One of our customers, a dealer, said of it—"that if that was the paste we stuck our labels on with, it was good enough."

Mr. G. G. Rockwood says: Your Pearl Paste sticketh closer than a brother, and remains as sweet as a baby's first kiss. It is a *desideratum* for the photographer.

CORRESPONDENCE.

SCHULENBURG, Feb. 2, 1884.

E. & H. T. ANTHONY & Co.

Dear Sirs: In regard to dry plates, I have used all kinds, but I think Eastman's are the best. I always get good results with them, and in printing qualities they cannot be surpassed.

Respectfully, WM. TAUCH.

NILES, MICH., Feb. 18, 1884.

DEAR SIR: In regard to the BULLETIN I will say that I could not feel reconciled to do business without it. I take seven photo. journals, and I find upon reference to my note book that it contains more hints culled from the BULLETIN than all of the others.

Very truly yours,

JAY DENSMORE.

BUREAU JUNCTION, Feb. 19, 1884.

E. & H. T. ANTHONY & Co.

Dear Sirs: Enclosed please find \$2 00 for BULLETIN for 1884. Glad to see it coming every month; a welcome visitor.

Yours truly, E. RODERICK.



✿ MADE ✿ WITH ✿ THE ✿ DETECTIVE ✿ CAMERA, ✿



✿ ON ✿ EASTMAN'S ✿ SPECIAL ✿ DRY ✿ PLATE ✿ BY ✿ AN ✿ AMATEUR. ✿

ANTHONY'S PHOTOGRAPHIC BULLETIN

FOR MARCH, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

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Anthony's
Photographic Bulletin,
ILLUSTRATED.

Terms for 1884: Two Dollars.

Unillustrated, One Dollar.

Payable in Advance,

And only to those who pay.

VOL. XV.—7

Ceramic Photography.*

BY A. L. HENDERSON.

THE subject this evening is, no doubt, more interesting to you from a photographic point of view than any other. Believing such to be the case I will only just refer, *en passant*, to what is known, or not, of the early history of the art.

Ceramic pottery or ware is so old that in tombs which have lain unopened since the time of the Pharaohs vases and jugs have been found. The manufacture of porcelain is of later origin in Europe, although known in China nearly 2,000 years ago. The manufacture and decoration of porcelain in Dresden dates from about 1710. It was a secret process, and the workmen were sworn to secrecy till they went to their graves.

Many attempted to imitate the Dresden and China porcelain, and the French some 100 years ago discovered a fine clay at St. Yrieix, near Limoges, very suitable for making porcelain. The early English porcelain was glazed with a composition of sand, obtained from the Isle of Wight, and was mixed with clay, flint, glass, and lead.

A manufactory of porcelain was carried on at Chelsea, and these works were re-

* A lecture given before the London and Provincial Photographic Association, accompanied by a practical demonstration.

moved to Derby in 1748. A company was formed in Worcester for this manufacture, and at a later period Staffordshire could boast of large works. Wedgwood's discoveries and re-earches were fully and universally acknowledged, and were followed by many others—notably by those of Minton, Doulton, Copeland, etc.

I think I have stated sufficient to show that to no single individual or country can the credit be given for the discovery of pottery, porcelain, or ceramics. The term "hard" or "soft" porcelain is two-fold. The "hard" is a substance that is brittle or difficult to fuse; the "soft" is quite the reverse, differing only by the amount of solid body or infusible material contained in the flux or glaze. All vitreous substances laid on or supported by metal are usually called "enamel." It is the soft porcelain or enamel that I will have specially to deal with to-night. It is to M. Lafon de Camarsac we are indebted for ceramic photography, he being the first to produce photographs fixed by fire (about 1856).

His method, so far as I can learn, has never been published, and is still considered a secret process. Many operators have called upon me offering their services, and who professed to have been working on enamel in M. Camarsac's employ, but in no case have they produced presentable results. His (Camarsac's) method, I have little doubt, is what is usually called the "dusting-on process;" that is, a glass plate is first coated with collodion and then with a mixture of sugar, honey, and bichromate of ammonium. The plate is exposed under a transparency, the affected parts become somewhat hardened or less tacky or hygroscopic by the action of the light. The plate is then dusted over with an enamel color finely ground, when the image will appear, the color adhering to the moist portions. It is then placed in acid and water to remove all soluble matter, transferred to the permanent support, and placed in the kiln.

When the carbon process was introduced, at the first glance it seemed as if enamel or porcelain photography would receive a great

impetus; but the difficulty of burning off the gelatine was almost insurmountable. Mr. Firling, of Dorchester, about sixteen years ago, showed me some promising results by the carbon process. Some later advances, however, have been made in this direction by using saponaceous substances to prevent the cracking and blistering of the gelatine.

The second method of producing vitrifiable photographs is known as the "substitution process;" that is, a transparency is taken on wet collodion and various chemicals are allowed to react on the silver, thereby depositing and substituting metals in lieu of the silver, which if left in the picture would give a disagreeable tone. (Silver gives a bright yellow color.) Of the two processes named I would give preference to the "dusting on," as a greater range of color can be obtained.

The third and last method is that devised by the author of this communication. It is with some difficulty I can find a name for the method. I might call it a "mongrel process," as it comes between the first two. Before demonstrating this method I would like to quote a few editorial remarks on enamel photography from the *Art Journal*:

"If the ancients had been masters of this process it would not have been so difficult to settle the truth of history. Medals half devoured by rust have saved the names of many great men; the features have altered whilst a *souvenir* remains; but enamels would have given us a perfect portrait and precise date. Consider the pictures of the greatest masters; fire has destroyed some, and time and restoration have already altered those by which their date are the farthest removed from our time. The painted glass windows of our churches, on the contrary, have preserved unchanged the outlines and the colors which the artist fixed in the vitrifiable materials. The old enamelled medallions on the shrines and coffers of the Middle Ages have lost none of their freshness, and attest the immense advantages offered by a permanent product. But we are told the glass painters of those

days did not possess the means of reproducing half-tone, and consequently their art was superseded by painting in oil. Now, however, the case is widely different, and, thanks to photography, we are enabled to fix upon vitrifiable materials portraits the most striking, which lack no artistic quality."

Here I have a collodion transparency very thin, as you will see; the high lights are perfectly clear glass, and the shadows not heavy—such a transparency as would look best as a lantern picture. It was developed with—

Sulphate of iron, 5 grains.
Acetic acid (Beaufoy's), . . 15 minims.
Water, 1 ounce.
Saturated with common alum.

I will place it in a solution of a platinum salt, prepared as follows:

Bichloride of platinum, or its compound, 5 parts.
Bichloride of tin, or its compound, 30 "
Iodide of potassium, 30 "
Iodine, to saturation.
Acid (such as hydrochloric), 960 "
Silicate of potash, 20 "
Acetate of lead, 40 "
Water, 8,000 "
Saturate the whole with boracic acid.

The platinum and tin will to a certain extent take the place of the silver as well as depositing on what is already there. I can at any moment apply solvents—say nitric acid—that will not act on the platinum and remove the silver; and even after its removal the depositing action will still proceed. Should the silver be in a form (say chloride or iodide) that will not dissolve in nitric acid, I can oxidize or reduce it to the metallic state by heat, so that it will be amenable to treatment. It is seldom I have to resort to the removal of the silver, as there is such a small amount present, and it improves the tone rather than otherwise.

As soon as there is sufficient density I remove the picture from the solution, immerse it in a five per cent. solution of sulphuric

acid and water, saturated with boracic acid, and transfer it to the enamel tablet, dry it, and it is then ready for the fire. If one of the films be left in water for some days a peculiar action takes place; that is, the image will entirely disappear, leaving no trace of its color in the water, and if the enamel, when placed on its permanent support, be left exposed, unfired, to the air for some time, the coloring matter will become soluble in water. As a rule it is better not to add any flux or glaze over the picture. Great danger is likely to arise, as the flux or glaze being so much easier fused blisters might occur; and, although it gives a little greater depth to the shadows, a much deeper print is necessary. One of the secrets of photo-enamelling is to put the glaze on the plate first.

Many here believe that the whole secret lies in the firing. I will fire one so that it is melting. I will now press a knife into it, while in the fire, to show what state of fusion it is in, at the same time showing that there is no loss of color. I can place a photograph on (say) a Minton's tile and allow the image to sink into the glaze. I remove the image, leaving an impression on the porcelain, which might be inked and printed like a copper plate. These enamels may be colored by any artist with very little practice. Here is one—the first attempt. I think you will say it is fairly good. Of course a little knowledge is required as to which colors are to be applied first. To touch up an enamel or remove spots in the fired picture I use a brown enamel color mixed with a small quantity of sesquioxide of iridium rubbed up with spike oil of lavender, refiring to fix the touching.

I may as well mention a few of the colors produced by some of the oxides: Tin and arsenic give a white; gold, red or purple; copper, green or red; silver and titanium, yellow; cobalt, blue; iron, reddish yellow; platinum and tin, various tints of brown; iridium, black. The mention of iridium recalls an amusing circumstance. I had occasion to send to a large London dealer for a few grains of an iridium salt

for experimental purposes. My messenger brought back an entirely different compound, and on my calling personally for an explanation I was informed that they sent me that which was usually sold for photographic enamelling purposes as "Henderson's chloride of iridium." "Well," I said, "my name is Henderson, and I am a photo-enameller, but I have not been using iridium." The reply was that many persons called asking for the iridium similar to that used by Henderson. The moral is: If you wish to make dynamite, be careful where you buy your chemicals.

I am afraid time will not permit me to say anything more. I trust that I have made the matter clear; if not, it will afford me pleasure to reply to any questions.—*British Journal of Photography.*

Medical Photography.

House Surgeon Woman's Hospital, in the State of New York.

BY REYNOLD W. WILCOX, M.A., M.D.

WHILE photography has become a necessity in most arts and sciences, its employment, until recently, as an agent in the advancement of medical science has been limited. The reasons of this are not difficult to determine. Partly from the fact that the majority of medical practice is never utilized except for the pecuniary benefit of the physician, who rarely recognizes the fact that the medical science of the future is to be deduced from the accurate observations and painstaking records of the past, and leaves the unexplained and to him mysterious phenomena without study or record. Probably the most potent reason that photographic records have been so much neglected has been, that the processes were somewhat difficult and the work uncleanly. But as photography has become more accurate, and in its advancement yet simpler, we expect that this art also shall be laid under contribution to perfect and render lasting the records of to-day. Justly we may anticipate this result, since the processes of modern dry plate photography

have become as simple as those of urinary analysis, and can be acquired and practiced with as little expenditure of time and money.

But however much photographs and micro-photographs shall contribute to the record of medicine, this much is certain: their application will be in limited fields. It is chiefly to the preservation of the appearances of external surfaces of the body, and of post mortem specimens that photography can be applied. That ability, only acquired by practice, to detect and estimate the quality of a heart murmur, must ever remain subject to a personal equation. The intensity of the murmur cannot be represented by physical processes. But on the other hand, the different *facies*, or the appearance of a person suffering under certain types of insanity, are as susceptible to exact representation by photographic processes, as is the natural countenance. So in the surgery of deformities, the progress made towards correction by varying and successive operations and appliances can be accurately portrayed, without the possibility that the enthusiasm of the operator shall affect the truthfulness of the picture. Such a series of photographs would speak more eloquently and accurately than volumes of description. In diseases of the skin, depicting accurately the extent and configuration of the disease, although some plates must be artificially colored, photography has rendered great service.

In morbid anatomy an excellent field lies open for beautiful work, nor, indeed, has it been neglected, as already Delafield's work ("Studies in Pathological Anatomy New York, 1882.) is published, and some of the photographs are models of their kind. In other departments, "The Types of Insanity," New York, 1883, by Hamilton, contains plates from photographs taken instantaneously. In Hutchinson's book ("Illustrations of Clinical Surgery," London, 1875,) the plates are, many of them, from photographs, the author in the text speaking highly of that method in point of accuracy. Sayre ("Lectures on Orthopædic Surgery," New York, 1879,) uses the processes of photography to give accurate rec-

ords of progress made in the treatment of diseases causing deformity. As an apparatus costing ten dollars is amply competent to make any picture dealing with external appearances, the practitioner has it in his power to accurately reproduce his interesting cases at a trifling expense.

In regard to the photography of microscopic subjects, the dry plate processes have not hitherto yielded uniformly good results when compared with the wet plate. Yet when the dry plate was far from its present state of perfection, Giles, although preferring the wet plate for sunlight with unclouded sky, says (*Quarterly Journal of Microscopical Science*, 1876, p. 111,) that by the light of an ordinary paraffine lamp, good micro-photographs can be obtained by the gelatino bromide (dry plate) process. Although many men, eminent in their profession, have been enthusiastic in micro-photography, perhaps no one has been more successful than Dr. Woodward. In the various microscopical societies his work has been much admired for its accuracy and distinctness. Lea (*Manual of Photography*, second edition, Philadelphia, 1871, p. 259,) is authority that he has been "enabled to produce pictures of the utmost sharpness and perfectly satisfactory in other respects, with powers up to twenty-five hundred diameters, and that these pictures bear enlargement six to eight diameters in a copying camera." Of special interest is the fact that pictures taken with a one-eighth inch objective, and correspondingly enlarged, give as good results as those obtained directly with a one-fiftieth inch objective.

Sunlight passed through a bottle containing a solution of ammonio-sulphate of copper can be used, although not quite so efficient as the calcium or electric light. The elaborate and expensive apparatus has now given place to a simple combination of the camera and microscope. The process of photographing wet specimens is fully as simple as those processes necessary for the permanent preservation of the identical slides, with the further advantage that they need no microscope for reference.

Naturally processes yielding accurate and lasting records, as do the photographic, would be employed to further the ends of justice, nor are we mistaken. To adduce only one instance, the detection of blood and its identification from blood obtained from other sources. Dr. Richardson (*American Naturalist*, May 1881,) gives a very simple method of making this comparison. One half of the microscopic field being covered by one, the remaining portion by the other blood, a photograph being made, the "two kinds appear in remarkably fine contrast, even those bloods that are too nearly alike for safe discrimination in criminal cases, being easily distinguished when thus prepared from fresh material."

With an amateur outfit even, the opportunities that almost any physician has in the way of rendering permanent and available for future reference his interesting cases are under-estimated. The busy man, whose time is too fully occupied with his daily duties, can at least find the time to expose a plate which can be developed at his leisure, when his opportunities would not allow the writing of long pages of description.

Amateur photography has become popularized as a means of recreation; it certainly cannot be a difficult matter to make such use of it, that each physician may contribute his share to the advancement of medical knowledge—*St. Louis Medical Journal* for Jan., 1884.

The Real Cause.

THE great increase of insanity here and abroad within the last few years has of course attracted the attention of medical men and stimulated them to invent explanatory theories. None of these theories are satisfactory. Most of them are ingenious, and all of them are interesting, but they fail to account, except to the satisfaction of their inventors, for the steady growth of insanity. It has not occurred to a single medical man that the first noticeable increase in the percentage of lunatics in this country and in England took place about a

year after the introduction of dry-plate photography. Had this fact been noticed, the coincidence could hardly have failed to suggest its true explanation.

The invention of the dry plate made amateur photography attractive to thousands of innocent and unsuspecting people. It seemed to be such a simple and easy thing for any man, woman, or boy to buy a camera and its appurtenances, and to take photographs of people, landscapes, things, and American rural architecture. The dealers in photographic materials published ingenious and attractive advertisements, proving that at a nominal cost a blind and weak-minded cripple could, with ten minutes' experience, take wonderfully beautiful pictures. The result was that thousands of people became amateur photographers, and the number is yearly increasing in more than a geometrical ratio.

Now, what actually happens when an innocent man undertakes amateur photography is this: He launches himself on a boundless sea of uncertainty, and the greater the number of pilots he consults the more hopeless is his case. He begins by using "Smith's celebrated dry plates," but within a month he meets with ten other amateurs and three or four dealers in photographic materials, each one of whom tells him of a different dry plate which is better than all others, and without which he can hope to accomplish nothing. Naturally he tries to follow his latest adviser, and it thus comes to pass that he never uses any dry plate long enough to learn how to manage it. The average brain would probably stand the strain of this uncertainty as to the merits of plates were it not complicated with a still greater uncertainty as to "developers." No matter what "developer" the beginner may use he will be told to discard it and try another. It is estimated that the different combinations of chemicals which may be used as "developers" amount to 37,218, and the unhappy man who begins the search for the very best "developer" is on the high road to insanity.

What is said of plates and "developers" applies also to "fixing baths," "toning

baths," and the countless processes which various photographers have adopted. Each photographer has his own pet processes, and looks with scorn on all others. If the beginner knows only three photographers these are quite enough to overthrow his mental balance. No matter on what question bearing on photography he may consult the three photographers, each one will give him an answer totally different from those of the other two. There are few men strong enough to preserve their serenity in this conflict of opinion. The intellect of the ordinary amateur reels under it, and he becomes a hopeless mental wreck. Our lunatic asylums are now crowded with men who rave of developers and toning baths, and who solemnly conjure a visitor by all he may hold sacred never to use Smith's or Robinson's plates, but to stake his eternal soul on the supreme excellence of Thompson's plates and Jackson's "developer."

Every amateur who has tried dry-plate photography and preserved his reason will have no difficulty in attributing the recent growth of insanity to the introduction of dry plates. We need search no further to find out why our lunatic asylums are crowded. The insidious dry plate and the plausible developer furnish the explanation that medical men have sought in vain.—*N. Y. Times.*

ED. OF ANTHONY'S PHOTO BULLETIN.

Sir: I enclose you a brief communication to put between the backs of the BULLETIN for the forthcoming month. I am highly delighted with the BULLETIN for 1883. I think it is a great credit to you and the contributors. It seems to be improving year by year; the photographs alone are worth the money charged for the whole. In the present article I would like to offer a few suggestions to the American dry plate makers. I have tried most of those of highest repute, and will speak of them especially. They are all good commercial plates, and one might produce fair to good work on them generally; but they are not as

they might be, if a little more care was used by the hands in the various departments through which they have to pass in their manufacture. These makers pass out some good plates, but they all seem to be tarred with the same brush.

1. *Hairs and dirt in the emulsion.*—It is dirt everywhere. Not so bad now as it was some time ago. They are improving; but yet there is room. Probably a bubble will appear across the eye either in plate or film, or a long hair from some man's whiskers; then a lump of hard gelatine on one ear. Sometimes transparent veins run right across the features or dress. When you come to these, and know it is produced by the carelessness of the man who filters the emulsion and coats the plates, it is enough to make one discard that brand.

2. *The cutting of the plate.*—Something ought to be done to get a uniform plate, or otherwise make the holders of greater latitude. One plate you cannot get in—it is a quarter of an inch too large; the next plate you come to will drop right through. They don't seem to care how they send them out so long as they are sold. Surely these things should not be.

3. *The opacity of the glass on which they are made.*—I verily believe some of them are prepared from common window glass, mildewed, and with a large quantity of bubbles. Also the albumenizing of the glass is generally faulty.

If you complain about these things to the makers they will tell you it is in the developing. I think it is an utter impossibility to develop an unevenly cut plate till it is straight, or to develop the bubbles out of the glass plate, or the mildew. Some time ago I complained to a maker of these things, so he called to show me how to manipulate them. He thought I might not be expert with them, although I had some good negatives taken on some of his plates. I have negatives hard to beat; and perhaps some from the same box, having also used the same means, failed to make anything decent. Well; he got at it. I watched him with three 8 x 10 plates, and the first he developed left the plate; the

second frilled so as to be useless; the third ditto. I had bought a quantity of plates from him, and never had a plate frilled before; but I could not get the contrast, and they were dirty. He brought his own developer, but left the plates disgusted. Some of my best negatives of the Cantilever Bridge and portraits in the gallery are made on that maker's plates.

The emulsion is not filtered clean, or the bottom ones of the batch are coated—dirt and all. Some of the plates in the same box are clean. Why are they not all so? To day I had a plate spoiled on account of its not fitting the holder, and the next plate was too small. On the next plate the packing had dropped down across the middle of the film and showed itself in the development. All these things could be improved upon by a little careful manipulating. I have not thrown out these hints because I have any one's axe to grind, but from a pure desire to elevate the standard of the American plate.

For Heaven's sake keep out the dirt and give us glass clear of mildew and of uniform size. I will conclude, Mr. Editor, for the present, by wishing the success of the American plate makers.

I will give a developer adapted to most all plates I have tried, and one that will bear the severest test:

No. 1.

Sulphite of soda, 4 ounces.
Water, 40 "

Dissolve, then add one-quarter of an ounce of citric acid; now add one ounce of pyro. and make up the bulk to fifty-four ounces.

No. 2.

Ammonia, liq., 880, . . . 1 ounce.
Bromide of potassium, . . 80 grains.
Bromide of ammonium, . 100 "
Water, 40 ounces.

Equal parts of this will give a 4-grain pyro. solution, a strength which is a very good average. More anon.

Wishing you prosperity.

J. B. LAWSON,

NIAGARA FALLS, ONT.

Photographs of Stage Scenes.

ON the first of May, 1883, at midnight, I took, by electric light at the Madison Square Theatre, my photographs of a scene (stage setting and actors) in the play of the "Russian Honeymoon." In these photographs there are twenty-eight people, who are all represented in their appropriate positions and with the proper expressions, the brief exposures (varying from six to eighteen seconds) rendering this possible. Of the complete success of this picture as a piece of photographic work I do not need to speak here; that has been conceded wherever the pictures have been seen, and they have been widely circulated. The point I wish to have settled is with regard to the correctness of my claim of priority in the successful performance of this feat.

I had no assistance of any sort from records of previous attempts in this line, but worked the matter up entirely for myself; and believed then, as I believe now, that I had made, if not the *first* attempt, at any rate the first *successful* one at such a work.

The American photographic journals with one accord pronounced my picture the first of its kind; but some outsiders have hinted at doubts as to the truth of this statement, and these doubts I am naturally anxious to have verified or dissipated.

The first doubt expressed was in a journal called the *Art Amateur*, published in this city. Almost immediately upon the publication of the picture and the statement of my claim for it as a novelty in photography, that paper came out with the statement that the same thing had been done in England some years before in connection with a play called *Far from the Madding Crowd*. I sent a copy of my picture to the *British Journal of Photography*, which in its next issue (June 15th, 1883) contained the following complimentary article about it:

"We have before us a very successful achievement in a branch of photography which is but little practiced, in spite of the facilities afforded by rapid gelatine plates

and the general adoption of electric lighting, namely, the representations of theatrical scenes and *tableaux* on the stage. Such attempts have already been made on several occasions in this country with but partial success, owing, doubtless, to the expense and trouble of making the necessary arrangements for lighting and the very brief periods of leisure that the hard worked artistes can spare from their more strictly professional duties. It has been reserved for Mr. B. J. Falk, of 949 Broadway, New York, aided by the enterprise of the proprietor of the Madison Square Theatre, to show what can be done in this direction, the picture before us bearing no evidence of having been taken under any but the most favorable conditions. The scene depicted is the closing *tableau* in Act II. of 'A Russian Honeymoon,' and includes about thirty figures besides stage accessories, exactly as presented to the audience. In size the print is about 12 x 8, taking in the full breadth of the stage. The exposure was made at midnight, no fewer than thirty arc lights of the Brush pattern being employed. The lens used was a Dallmeyer's rapid rectilinear with the second stop. The exposure for the picture was, we believe, about a minute,* though some smaller negatives were taken with exposures as short as eight seconds. A remarkable feature is the entire absence of the strong cast shadows so generally met with in pictures by the electric light, and the contrast between the illumination of the interior and the glimpse of open landscape and figures seen through the window in the centre is very cleverly managed. We shall not be surprised to find this example in theatrical advertising followed by managers on this side of the Atlantic."

On the receipt of this article I sent a copy of it to Mr. Montague Marks, the editor of the *Art Amateur*; but he refused to do me the justice of making any public note of it.

* NOTE.—The editor is mistaken in his statement as to time of exposure; the longest was, as already stated, 18 seconds.

At the late Milwaukee Convention this picture, together with my later electric light photographs of the *Rajah* scenes and of the Choral Union concert in the Madison Square Garden (all taken at night), was on exhibition. In the December, 1883, number of the *Philadelphia Photographer* is a letter from the celebrated Dr. Vogel on the subject of that exhibition, in which occurs the following passage: "Falk proves that it is possible to take excellent pictures of scenes from the stage by means of the electric light.

"I think, however, that the electric light is better managed in Berlin than in New York."

Anxious to know exactly what was meant by this—whether this kind of work had really been done in Berlin unknown to me—I took the liberty of writing to Dr. Vogel, who, in response, favored me with the following note:

DEAR SIR:

I am very much indebted to you for your letter of 27th Dec., wherein you have called my attention to a great mistake of the translator of my letter. I fully acknowledge your excellent stage photographs taken with electric light; and I beg to remark that, so far as I am informed, pictures of stage scenes like yours are never made, neither here nor elsewhere.

My remark, that electric light is better managed in Berlin than in New York, has nothing to do with photography at all. I made this remark in regard to the electric illumination of streets, hotels and stores. The translator has omitted to mention that.

Many thanks for your excellent stage scenes you have sent me.

Very truly yours,

DR. H. W. VOGEL.

Ed. Photo. Mittheilungen.

BERLIN, Jan. 13, 1884.

This note, and the *British Journal's* article, would seem to settle the matter—so far, at any rate, as Germany and England are concerned. But, should both these authorities prove to be mistaken, I should like to be informed of it; and I hope this

article may be the means of drawing a response from any one who can give me more positive information upon the subject. Until such information is received I may, I hope, be pardoned for believing and claiming that I have made the "first successful photographs of stage scenes by artificial light."

Very respectfully yours,

B. J. FALK.

Coloring Lantern Transparencies.

BY T. J. HOUSTON.

NO. I.

HAVING completed coloring a set of photographic transparent views of scenery in and around Hadley Wood and Barnet for exhibition at a forthcoming Sunday school Christmas entertainment, it was strongly urged upon me by a friend—an occasional contributor to *The British Journal of Photography*, who had favored me with his company and had closely watched me throughout—that I should contribute a few simple practical notes on this class of work for the benefit of himself and other readers of this Journal. With this request I now comply.

When I prepare photographic transparencies for coloring I do not treat them in precisely the same way as if I intended them to be used without color. If you examine a fine slide, by any well-known maker, embracing rural scenery with much foliage, it will be found that whereas in nature the foliage was green of a hue more or less bright, in the photograph it is seen to be many shades darker than it should be, owing to the number and density of the atoms of silver composing the foliage, this being the case to such an extent as to prevent the green pigment from showing at all. In some transparencies of this description I have piled upon the foliage layer after layer of my brightest green without any colorific result having been attained, the heavy, sombre, unnatural effect remaining as before.

This is altogether a different matter from painting a photograph upon paper or por-

celain; for in these the blackest foliage or heaviest shadows can be lighted up at pleasure by the employment of opaque or body colors, or by mixing a little flake white with the transparent pigments which alone are applicable to transparency painting. But if in a transparency recourse were had to this procedure it would make things worse than before, for the luminous equivalent of flake white when applied to paper is, in a transparency, the thinning of the deposited silver so as to allow more light to be transmitted—the touch of pure white given to form the highest light in the one finding in the other its equivalent in the complete removal of the image by the needle-point or penknife, so as to leave nothing but bare glass.

To one who has had some experience both in making and coloring transparencies it is not difficult to obtain the best class of photograph for receiving colors with effect, although it may prove difficult to describe the characteristic features of such a photograph. Perhaps the best idea will be conveyed by saying that it ought to be "outline-y," and even its outlines should not be too dense. A very brief exposure and rather long development afford the keynote to the nature of the manipulations requisite to secure the best effect. Plates prepared by the old-fashioned tannin process, and developed by acid pyro. and silver, give an effect peculiarly well-adapted for receiving color in the highest style of the art; but the exposure must be short and the development forced. When the picture is laid face down on a sheet of white paper, the appearance presented should be that of a properly printed proof upon paper, while the intensity, when raised up and looked through, must show a sufficiency of vigor.

Having obtained a suitable transparency, it must next be varnished. Some years ago I adopted the use of a varnish composed of sandarac dissolved in methylated spirit. It gave a clear, bright film, and both oil and water colors took to it nicely; but I sometimes had occasion—as every painter of lantern slides will have to do more or less frequently—to pick out bits, and put in, or

rather take out, touches of high light by means of the needle-point. I found, however, to my extreme dissatisfaction, that the collodion film would chip and break off round the spot upon which I operated, and that if I drew fine lines by my scratch point they became jagged and broken. Being recommended to try white hard spirit varnish diluted with alcohol, I did so with a result even worse than before. Having read in one of *The British Journal Photographic Almanacs* of the virtues of castor oil when added to a plain sandarac varnish I tried it with excellent effect.

I have also employed, with the greatest degree of success, a solution of albumen composed of the white of an egg beaten up with twice its volume of water together with ten drops of ammonia. After the frothy mass has settled the clear liquid is poured off. To use it, the transparency is flooded with the liquid, which is then drained off at one corner and the picture immediately immersed in a tray of hot water, the temperature of which is but little under the boiling point. This coagulates the albumen, leaving it not only of a glassy degree of brightness, but modified in such a manner as to render it unaffected by either water or oil paints, while it is susceptible of the most delicate touches of another class of pigment, which I shall describe before concluding.

The question now arises: What class of colors is best for transparency printing—oil, water, or varnish. This cannot easily be answered; each has its own advocates. They are all good in their way, and there are some transparency artists who employ them all even in one picture. As oil pigments appear to enjoy the greatest amount of popularity, I will speak of them first of all. Although nearly every dealer in lantern appliances keeps boxes of colors for sale, it will be advantageous, especially for the beginner, to purchase from artists' colormen, under their definite names, the various colors required. They are conveniently put up in tubes and are sold at a very low price—fourpence and upwards. It must also be noted that only very few pigments

can be employed, owing to the paucity of such as are quite transparent, hence the expenditure for an outfit is very small.

For blue, *Prussian Blue* forms the most useful among all the blue pigments, and one can get along very well indeed without any other, although there are some subjects in which *Payne's grey* comes in handy. There are other transparent blues, such as *Chinese blue* and *cyanine blue*; but the Prussian is susceptible of such easy modification by the admixture of others that no other is really required. The best yellows are *gamboge*, *Italian Pink* and *yellow lake*. There is but little difference between the two last, although the former of them is probably the more advantageous. The *gamboge* is useful for foliage, and with a small proportion of Prussian blue forms a good green. Both *raw* and *burnt sienna* must be procured. The former is useful in the representation of light, dry, sandy earth, dry roads and light colored houses; the latter is a very transparent brown of an orange tint. Both *Vandyke brown* and *burnt umber* are useful, but much less so in a photographic transparency than in other classes of work, because any subjects which were of these tones in nature will be represented so very darkly in the photograph as to require scarcely any coloring at all. *Crimson lake* and *pink madder* complete the list. The latter by itself dries very slowly, but by admixture of megilp or mastic varnish its drying is quickened. This applies also to the Italian pink. A tube of *lamp-black*, by which to render any portion more or less opaque; a tube of megilp, for use as a vehicle; and a bottle of mastic varnish and pale drying oil, together with a few sable brushes, a palette, palette-knife, and large camel's-hair brush complete the outfit.

The most important piece of work in the painting of a lantern landscape being the sky, I close this article by describing how it is done, premising that I do all my painting upon a retouching desk, which I find to answer this purpose rather better than the easels specially prepared for transparency painting. Let us imagine that the subject

is a landscape having about two-thirds sky, into which a tree and a spire project upwards. Mix on the palette a little burnt sienna and pink madder, and, having charged a brush with this, draw it in streaks across the sky, a little above the horizon, and then laying down the brush dab it all over with the point of the first or second finger until it presents a uniform appearance.

Never mind the fact that the paint has been carried over the tree and the spire; it must be removed from them by a pointed piece of soft wood as the last operation of all. Next apply to the upper portion of the sky some Prussian blue, and in doing so remember that there is no use whatever in hoping or attempting to make it quite uniform by means of the brush alone. The finger is the all potent instrument by which uniformity is secured, and *dabbing* with it must be had recourse to. Bear in mind that the sky is of a deeper hue at the zenith than near the horizon; therefore let the dabbing be performed in such a manner as to retain more of the paint at the top than lower down, the quantity being so attenuated by the time it descends to the warm layer already applied as to merge into it quite imperceptibly. The laying on of a uniform sky seems, like playing the violin, very easy to the onlooker; but it is only by dint of several trials, carefully made, that success is attained. As the beginner will probably spoil several skies before he succeeds to his own satisfaction, a soft piece of calico dipped in spirits of turpentine will be a useful aid to him during his novitiate.

To complete the blending of the colors, and to obliterate the slight textural markings arising from the rugosity of the finger-point, is the function of the large camel's-hair brush of which I have already spoken. It must be whisked very lightly over the surface; and, if cleverly done, all surface asperities will disappear and the coloring look as if the glass were stained. Until the sky presents such an appearance the formation of clouds must not be thought of; but the treatment of these is reserved for my second article.—*Brit. Jour. of Phot.*

Photographic Pencillings.

BY G. H. LOOMIS.

BOSTON, 1884.

I COMMENCE these pencillings on the 27th of February, looking out from my window upon the most enchanting and fairy-like snow scene I ever beheld. The trees, telegraph wires, fences and every thing in view, are clothed in gorgeous array, and for the first time for many weeks I fear the sun may rift the clouds and spoil the scene. More than once have I sighed for a camera and the ever ready "Eastman Special" to catch the scene ere it melted in mid air; but I observe that several of the craft are out and alert with their machines and tripods to 'scape the most attractive points, and I will see to it that you have copies for your specimen collection, provided, of course, I don't forget it.

I think I told you in my January pencillings that I would send you some notes of observation gleaned from a walk about the galleries, but I have been shut in by a serious and protracted cold, the origin and growth of the worst "spell of weather" ever experienced in this latitude.

While I have naturally indulged in a modest amount of self-congratulation that I was not in the "pictor business" during this meteorological *mélange*, I have not been unmindful and prayerless for those in darkness, and needing the light of the sun where-withal to prosecute their art vocations.

Beginning as early as the Christmas holidays, the weather prophets have virtually ignored the interest of photographers and invested largely, and, we should judge, prosperously in the umbrella and overshoe trade. The leading item of the daily press has been rain, snow, sleet, slush—with impenetrable clouds and winds veering the wrong way—till the construction of another ark has been seriously considered. It is said that it is an "ill wind that blows nobody any good," and it is therefore probable that all or nearly all the wise and wide-awake members of the trade have used the passing hours to put their places in order and study up the

latest and best points of progress in their vocation.

Sauntering up Washington Street recently we observed a new opening in photography, it being the extensively planned establishment of Walter E. Chickering, christened on his business card "the largest and finest studio in the world." Whether this be so by actual measurement or not, we are free to confess that it is by far the largest we ever saw, and will afford the proprietor ample room accommodations for an unlimited volume of business. It occupies three entire floors of the large building near the junction of Washington with Boylston Streets in immediate proximity to four theatres—the new Adams House and White's great dry goods house—so that it has the advantage of a lively neighborhood. Mr. Chickering, we believe, has been (if not now) associated with his brother for two or three years on West Street, but having outgrown its accommodations and believing in the future of photography has made this venture, which many of the craft no doubt regard as over-sanguine for the Hub. At the time of our call the premises were unfinished and several workmen were engaged in putting matters to rights, but enough was in order to show that in all its appointments nothing more could be desired to make it first-class. A fair description of this studio will require more space than you will have to spare this month, so I will adjourn over to another visit, when I will be more explicit.

By reason of the driving storm I was not able to join the excursion to Brockton to examine the reconstructed studio of our mutual friend Burrill. It was a disappointment, and for consolation I must hold in anticipation another opportunity; in the meantime, I presume some one has provided you with an account of the visitation.

Mr. E. J. Foss of Malden has, we learn, remodelled his studio, and we hold a standing invitation to call and examine its improvements. Brother Foss has a leading position in the new city of Malden; in fact, we suspect he has it "all to himself;" and if painstaking effort to provide the latest

and best in his art will secure a generous patronage, Foss will win.

In Cambridge, while no new galleries have appeared, some changes are noted.

The Warren gallery—after passing into the hands of Baltzy, since deceased, has been purchased by Whitney & Son, who have made several improvements and are ready for business, whenever it shall present itself. Mr. Whitney is a studious experimentalist, and thoroughly in love with his art; and if, with the added facilities at his command he does not meet with success, he will not get his deserts.

The Central Square studio vacated by Whitney is occupied by Major Fred C. Low, who has fixed up things conveniently and orderly, and being a first floor photographer, will offer special inducements to babies in carriages, and friends and relatives who may accompany them. No doubt "Uncle Dudley" will bring in his share of public patronage.

Lincoln, the man of marine views and interiors, is busy with his negatives filling orders as fast as the solar rays can be economized for printing purposes. In view of the recent bad management of the weather bureau, he will with many others vote for a new prophet.

We understand that Brother Bowers, of Lynn, has after two years' retirement resumed business. The craft will cordially welcome him back to full fellowship.

At the annual meeting of the Massachusetts Photographic Association, recently held at Black's studio, Mr. A. A. Glines, of Newton, was re-elected President; H. W. Whitney, of Cambridgeport, Secretary, and John Stocker, with Codman & Co., Boston, was chosen Treasurer. We have not a list of the Executive Committee nor any report of the meeting, but understand that matters are moving encouragingly.

In a supplementary letter I will endeavor to chronicle some observations, gleaned from the Boston studios, from which some fine work is being sent out.

Toning Prints.

TO THE EDITOR:

Toning is one of the greatest difficulties which the amateur meets in the practice of photography, and a standing reproach of the non-professional is the "foxy" appearance of his prints. Do what he may, experiment as he pleases, the beautiful grey and blue tones so highly admired in the professional's work in his are conspicuous by their absence. While I am perfectly ready to admit the stubborn incompetence of the average amateur to do as he is bidden, or to exactly follow directions which may be given him, I am sure that something must be wrong with the printed instructions for toning. I have never been able by the most careful following of directions to produce even an approximation to the tones found in the pictures of professional artists. I have attempted in every case to follow the instructions given me with the most absolute accuracy; I have weighed and measured my solutions, tested with litmus paper the condition of the baths in order to have the neutrality exactly as called for, and have observed every hint given with all the accuracy which my knowledge of chemistry and photography would permit. Up to the present time the nearest approach to a toned picture which I have been able to make would ruin forever the reputation of the best photographer in the country. This is the more provoking, since in the negative I am able to produce work that would not disgrace any of my professional acquaintances. You can therefore, Mr. Editor, imagine my feelings when after a long session with the toning bath I succeed in producing a picture the color of suds made with soap in hard water. To say that I feel like committing suicide is to express it mildly. I feel, as the boy said, like "committing suicide on the whole photographic profession."

Now I have a favor to ask of you, Sir. Will you not kindly give the amateurs some instructions in the art of toning which will be of practical value to them, instructions which will, if closely followed, give on ordinary, ready sensitized paper the warm or

cool tones produced by photographers in their regular work? The cool tones are preferable, because most suitable for landscape work. In any event give us something that will enable us at least to make a passable print free enough from the amateur's characteristic mark of Cain to pass unnoticed in an album. By doing so you will confer an inestimable favor upon the non-professionals and win their sincere appreciation.

—
TROUBLED.

The Number of Persons who Spoil a Photograph.

NATURALLY the reader will say that any one can spoil a picture who can get it within reach. This, however, though the obvious meaning, is not the one we wish to convey by the title. In many photographic establishments the work is divided into departments under the management of different individuals. The question of the number of persons who have the making or marring of the finished picture within their reach is decidedly an interesting one. First on the list is the man who has the posing to make. If his work is not skillful, no amount of skill elsewhere in the establishment will render the final work good. If he be an artist in feeling, in the work of posing, in the arrangement of the accessories and in the disposition of the light, a perfect picture is possible. But if he fails in any portion of his work, nothing which follows him in the making of a photograph will save the final result from being a failure. Leaving the camera the picture is next at the mercy of the dark room operator. We hold him to be next in order, because the plate maker does not properly come into account, since uniformity is now so well assured that the loss of a picture from a defective plate is so rare that it hardly need be counted as one of the causes of failure in the dark room.

The picture is at the mercy of the operator, and if his knowledge of his plates, or his chemicals be not perfect, if he is lacking in judgment, or has not a keen eye for his

work, failure is certain. If he is heedless, dirty in habits, uses contaminated solutions, or there is carelessness in fixing or washing, the whole work of the establishment is thrown away.

From the dark room, the plate passes into the hands of one who receives the most hearty condemnation from both photographers and public, the retoucher. If the negative is too round, too smooth; if an expression has been lost or is too staid; if old age is brought too near to its teens, or ugliness is made too beautiful, the fault is most conveniently laid upon the retoucher.

And candor requires it to be said that at the retoucher's door a thousand faults can be laid without injustice, and with equal justice he can as often be praised. For the time being our negative is utterly in his hands. In case, however, his work is successful, the admiring public say, "behold the wonderful work of the photographer." When the negative successfully passes the retoucher's frame, in the printing room it is again in danger, and here perhaps its fate is as evenly in the balance as in any other part of the establishment. With a poor negative the good printer can do wonders, and with a good negative a poor printer can likewise work miracles—but such miracles as are generally supposed to be inspired by the father of lies. Printing in itself deserves to be raised to the dignity of a fine art. The poorest negative under skillful manipulation can be made to give such surprising results, and a good one made to seem almost the work of the brush rather than of photography, pure and simple.

Of the dangers which the picture encounters in toning, fixing and washing, it is hard to speak; they are so manifold. They comprise the chemical and mechanical. They arise from carelessness, from faulty apparatus, from haste, and from a thousand and one causes. Indeed in the toning bath very frequently lies the future of the photograph. And it is held by many men of experience that toning has quite as much to do with permanence as fixing and developing.

Having escaped the dangers of toning, having been successfully fixed and thoroughly washed, new dangers are encountered in the mounting room, where the use of imperfect paste, poor card stock, chemicals used in bleaching the stock, and a thousand other dangers which individually seem not to be entirely known, await the picture. Indeed the photographer's dread of the one who mounts is quite as great as that which he has for some other subordinates. When mounted the burnisher may ruin the print just as effectively as any other one in this long series of possible accident makers. Even spotting out may be done with such haste and carelessness that the completed work may be ruined at the last moment.

With such a category as this, still imperfect because it does not embrace the numerous unknown causes, is it not a wonder that good or permanent prints are ever made? Should not the photographer be praised for the perfection of his work instead of blamed for the faults, which are really the exception rather than the rule?

Going through the albums of any half-dozen persons one may know will disclose the fact that even in pictures dating back to the beginning of albumen printing, there are more well preserved pictures than those which are fading.

Borrowed Plumes.

TO THE ED. OF ANTHONY'S BULLETIN.

Dear Sir: My attention was attracted by a notice in the *London Photographic News* of January 4th, which stated that a silver medal awarded to a Mr. W. F. Donkin for an enlargement exhibited by him at the Bristol International Exhibition had been retained by the Council of Awards, as the enlargement in question was not his work, but that of the Autotype Co.

The notice does not say whether the gentleman was professional or amateur, or whether the enlargement had been placed with his other exhibits through mistake or not. Stretching the mantle of charity even at the risk of rending it, we will suppose it

was a mistake, and that the enlargement was exhibited without the knowledge of the owner. But the idea is suggested by this notice: How many are there of our amateurs who decking themselves in borrowed plumes have the effrontery to claim as their own work photographs which have been printed, toned, mounted and enlarged by others, and sometimes even the negatives developed by other hands?

We know how the lecturers strutted before us in their borrowed plumes, until the public became so disgusted with them and their literary thefts that at last they found themselves left severely alone and their occupation gone. Let us hope that such will not be the case with the amateur photographer, and that there is honor, honesty, and manly spirit enough among them to claim only as their work that which they themselves have done, and to stamp out with indignant scorn any attempt to do otherwise.

VERITAS.

A Copy Retouched and Enlarged.

The Amateur's Borrowed Plumes.—A Parody.

"Breathes there a man with soul so dead,
Who never faltered when he said
This is my work, done by my hand!
Whose cheeks with blushes ne'er hath burned
When friends with praise his prints returned,
His photographs of sea and land?
He draws the slide, uncaps the lens,
And there his work begins and ends;
For all the rest are borrowed plumes;
The work of others he assumes.
Developing is not his art,
Not his the printing, toning part;
And mounting, work for any child,
Would almost set his poor brain wild.
Devoid of honor and of shame
He prints upon the card his name;
Proclaims the work as his aloud;
When called an artist feels quite proud.
"If such there breathe, go mark him well,
For him no minstrel raptures swell."
Great though his humbug, proud his name,
Boundless his cheek, as all proclaim.
Slang phrases I abhor, and hardly ever speak,
But can one find a word that means so much
as cheek?
Despite his humbug, boast and brass,
He simply writes himself an ass;
And like the mist, his great renown
Will vanish, ere the sun goes down;

Showing from whence his talents sprung,
Unworthy to be praised or sung.

VERITAS.

The above parody comes to us with the following very neat letter in rhyme, addressed to the editor. It is entitled, "A Word in Private."

You may say that his picture will just suit the times,
And that hints are best taken when written in rhymes
The retouching though clumsy leaves the likeness
still there,

And the tone of contempt rings out clear on the air.
You may think it unsharp, weak and faint, if you will;
But the perfume vase shattered was odorous still.

Most of our readers will be struck with a certain amount of justice in the caustic remarks which VERITAS makes in regard to borrowed plumes. There is undoubtedly a certain amount of strutting done by amateurs with honors belonging to others. In justice, however, something may be said in defence of the amateur who has his printing, toning and mounting done by professionals. Our friend admits in his letter that the printing, toning and mounting of photographs are work for any child; and certainly the washing, fixing and varnishing may be considered work for the comparatively unskilled. Development really rises to the plane of an art, but still no amount of skill in the developing room will make an artistic picture when the camera has been wrongly placed or an ugly view chosen. Why under these circumstances should the amateur be so savagely censured for employing aid in doing those portions of the work which professionals themselves consider secondary. When we compare the work of professional photographers of undoubted skill in dark room manipulation, we find that it is the rule rather than the exception that they are from an artistic stand-point different; that one produces work of an artistic value, while the other's work is commonplace.

We call to mind as we write two men whose skill in development is as nearly as possible equal. One of these men ranks as an artist; his photographs are purchased by painters as models for study. He has a quick eye for picturesque effects, and a judgment so rapid in its action that his in-

stantaneous views are as well balanced as those which can be chosen with more deliberation. The other man as an artist, to put it in the mildest way, has no standing whatever. His instantaneous pictures sell to some extent, but the subjects are generally chosen with no regard for picturesque effects, and his negatives will be laid aside and he will do little printing as soon as his more artistic rival has a greater collection.

Further illustration of the fact that the artistic study of photography is valuable, aside from the mechanical and chemical skill, is not necessary. Honor should go where honor is due, and although the amateur may not be a photographer in any sense of the word, having his plates developed, printed, toned, mounted and burnished by professionals, yet he may justly claim the product as his own artistic work. But with VERITAS we must say that the amateur who places the manipulation in the hands of the professional should have the "honor, honesty, and manly spirit" to claim boldly only the artistic work which is his own, and give the professionals what is justly their due—the praise for the manipulative skill which has enabled his artistic ideas to take a definite and permanent form.

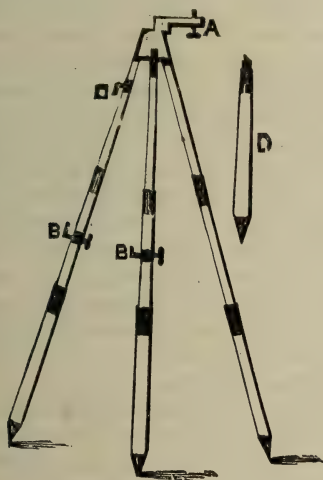
Obernetter's Photo-Engraving.

THE process, as made known by the inventor, consists of the following manipulations: A negative produced with a highly silvered emulsion is, according to Obernetter's process, changed into a diapositive, and then, by treating the same with chloride of iron and chromic acid, into a chloride of silver picture. The picture, which from the beginning has been lying upon an elastic film, is then transferred upon a polished or grained metal plate, and by means of an electric current the chloride of silver with the metal is changed to corresponding metallic chlorate and silver. Those parts of the metal plate showing the heaviest deposit of chloride of silver are etched deepest. Zinc and brass are most suitable for relief plates; copper and steel for intaglio ones.—*Photographisches Archiv.*

[From our Special London Correspondent.]

FOREIGN NOTES.

A Combined Easel and Camera Stand for Artists.—Mr. T. S. Whaite contributes to the *Photo. News* a description of a stand which he has found to be well adapted to the requirements of those artists who take a small camera to assist them in filling in the details of a scene. It must be remembered that the artist almost invariably selects a low point of view—such, indeed, as he would take when seated upon a camp stool—while the photographer usually selects a much higher point, and many British photographers go about with stands nearly six feet high, in order that they may conveniently look over fences and low walls with the eye of the camera. Without expressing a very decided opinion as to the general advantages of either system, Mr.



A, bracket to hold small camera. B B, sliding screws, to receive canvas or sketch-block. C, hook, to secure canvas. D, leg as packed for travelling.

Whaite asks photographers to pause and consider whether artists are altogether wrong in preferring the low point of sight. Mr. Whaite's easel stand is about four feet high, and the camera is attached to a small bracket at the top, so as not to interfere with the canvas or sketch books, it being intended that the camera should remain in

position during the whole of the time the artist is at work, so that any passing figures or peculiar effects of lighting due to clouds may be secured. One innovation made by Mr. Whaite is to plant the thick end of the leg downwards, and he finds that by so doing he realizes substantial advantage as regards steadiness.

The foregoing cut represents Mr. Whaite's stand.

The legs are made of bamboo and are in three segments sliding within each other, so that a very low point of view can be taken if desired.

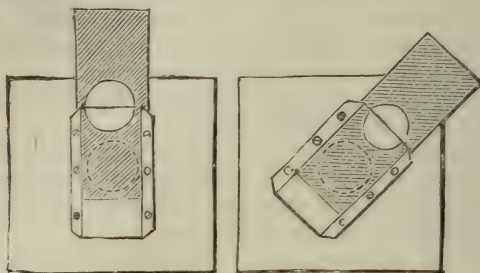
The Drop Shutter.—Mr. H. Baden Pritchard, who is now making a short photographic tour in Algeria, and who has set up his camera on some of the fertile spots or oases of the great desert of the Sahara, speaks very highly of the practical advantages of the simple drop shutter over the highly complex pieces of mechanism which are now so often sold to the inexperienced tourist. Nothing tests a piece of apparatus so much as rough journeying, and a very small proportion of sand, grit or dust is tolerably fatal to the smooth working of wheel or spring work.

If the clock-work once gets clogged with dirt or out of order it usually remains an incubus to the end of the journey, while to clean the drop shutter and to make it run easily by the application of a trace of oil or a touch of blacklead—this latter being always at hand in the form of a pencil—is the work of a few seconds.

Mr. Pritchard says: By the way, the shutter I use is a neat little drop diaphragm, made of ebonite, to which I have affixed in front a projecting wire for hood or shade. I have chosen it not only for its simplicity, but because, with a little care, its action may be varied considerably. A suitable weight (I employ a bunch of keys) put astride the diaphragm makes it fall very rapidly for quick exposures, while if you want to retard the fall, I simply twist the shutter apparatus round, so that instead of the diaphragm falling perpendicularly, it glides slowly down in a slanting position, say at an angle of 45°. Thus—

I do not know any other shutter at once so simple and effective for the tourist photographer. I have generally noticed that the photographic tourist who commences

with a highly complex apparatus soon becomes contented with one very much simpler.



A Fatal Lantern Accident.—Although numerous cases are on record in which explosions at lantern exhibitions have served to alarm the audience, to extinguish the lights and to break the windows, I do not remember to have heard of such a disastrous explosion as that which occurred a few days ago at Oldham.

It seems that Mr. Diggle, a well known photographer at Oldham, was exhibiting a series of dissolving views to about five hundred children, and whilst they were singing "Shall we Gather at the River," a photograph of the hymn being projected upon the screen, a loud report was heard, accompanied by the smashing of windows, the gas being at the same time extinguished. On the gas being lighted, the magic lantern apparatus and furniture were found smashed to fragments. Children rushed down the staircase, and the police assisted numbers of them through windows and down ladders. Several were crushed. The explosion is said to have been caused by the gas-bag coming into contact with a flame, or the sudden lifting of the pressure board. The floor of the hall was ripped up, and the room beneath, where the Local Board assemble, was wrecked. Mr. Diggle was cut about the face, and thrown down by the force of the explosion. The body of one boy who was killed was found on the staircase, he having evidently been suffocated by the pressure of the crowd.

It seems that an ether-oxygen burner

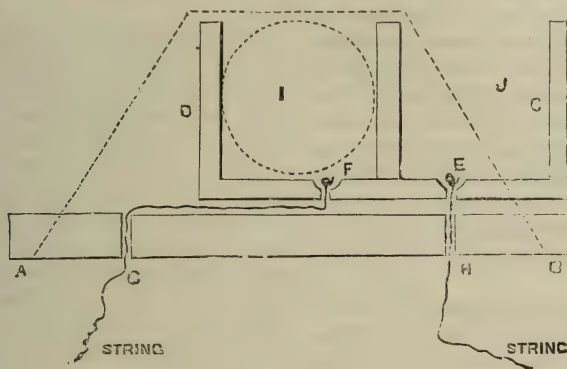
was being used, and that during the exhibition some of the ether had been sucked back into the bag, and under these circumstances it is easy to understand the unusual violence of the explosion, as a mixture of ether vapor and oxygen contains more detonating material in a given volume than a mixture of oxygen and hydrogen or oxygen and coal gas. It is much to be regretted that an element of danger seems to be altogether inseparable from lantern exhibitions, although there is no doubt that when proper precautions are taken safety can be insured. The actual danger depends on the circumstance that one cannot depend on proper precautions being taken; or, in other words, lantern appliances are quite safe in really careful hands, and when properly fenced in so as to prevent outsiders tampering with them.

Among the sources of danger which are not sufficiently known may be mentioned combustible dust in the gas bags. Rubber very readily undergoes oxidation, and under some circumstances a very inflammable powder is formed. If this is mixed with oxygen, and a light applied, a much more violent explosion results than when a mixture of ether vapor and oxygen detonates. This dangerous dust is especially liable to be formed inside the gas bags when the oxygen is imperfectly purified from the traces of chlorine, which are liberated during the process of its preparation. The best way to deal with a dusty bag is to fill

it with air and well agitate before expelling the air, and then to moisten the inside with a little glycerine.

A Slide Carrier for the Lantern.—One of the least satisfactory parts of an ordinary exhibition with a single lantern is, in many cases, the halting and uncertain way in which the fresh slides make their appear-

ance; the new subjects frequently either stopping short of the mark or going beyond it. An ingenious and extremely simple form of carrier recently devised by Mr. Alexander Cowan obviates these disadvantages altogether, and brings the new slides into the field with rapidity and precision.



It consists of a wooden base-piece, A B, upon which a double frame, D C, can slide freely from side to side, this double frame being kept in position by a pair of upright boards shaped as indicated by the dotted lines. The two compartments, I J, of the double sliding frame are grooved so as to take the usual lantern slide ($3\frac{1}{4}$ inches square); and we will suppose that a slide is placed into the outer compartment, J, and a steady pull at the string, G, will now bring the slide instantly into the field of the lantern, while the compartment, I, is brought to the other end of the base-piece, where it may be charged with a slide.

One minor advantage of the lantern carrier now described is the circumstance that the slide which is in readiness to be shot into the field remains sufficiently within the sight of the manipulator for him to at once notice whether it is placed correctly.

About Grams and Cubic Centimeters.—Once more I am privileged to send you an advance copy of an article by Mr. Baden Pritchard, and this time he discourses of the metric system.

Many of our good old-fashioned notions

about the French are disappearing. One by one they leave us—cherished relics of a bygone age—and before long there will not be a single trait remaining to remind us of the vast superiority of England and all things English. The good old times have gone, indeed, and no wonder we hear on all sides of our decline and falling off. Our fathers despised the French as frog-eaters; to-day, a Paris *chef* receives double the pay of an English professed cook. It used to be a maxim that any Englishman could beat three Frenchmen, as he had done repeatedly at Waterloo, Agincourt, and Fontenoy. Or was it the other way at Fontenoy? No matter, the principle was so evident that illustrations were unnecessary. Yet we find to-day discussions going on at home in military circles in which the British soldier is valued at no more than an ordinary German or Frenchman.

The same levelling spirit is attacking our weights and measures. The metrical system and the decimal system have carried all before them on the Continent; and the Englishman's house, which is proverbially his castle, is in danger of assault. Our in-

sular position has saved us to some extent; but when we find Germany—the natural foe, as she has been termed, of France—quietly and steadily adopting French measures and even French milestones, the end, if slow in coming, is none the less sure. The metrical and decimal systems are certain of adoption by Great Britain, since they have been adopted by all the enlightened nations of Europe. Nay, science, the forerunner of all, has already recognized the innovation in this country, and British chemists and physicists, as everybody knows, no longer calculate by ounce and grain. Science, all the world over, has but one way of expressing figures, and it is evident, therefore, that if photographers desire to be numbered in the world of science, they have no option but to adopt the universal language also.

The first essential of any system of measurement is an unvarying standard. This is obvious. Now the unsatisfactory nature of such variable standards as barleycorns, hands, cubits, and feet, was oftentimes subject for discussion in bye-gone times, and many were the suggestions of philosophers to select a standard rule. At last, a very sound suggestion came from the French geometricians. "Let us take the earth itself as a standard," they said, and the idea met with almost unanimous approval. One ten-millionth part of the distance from the equator to the pole, measured over the curved surface of the earth, and not in a direct line, like the string of a bow, was selected as the basis, and this was termed a metre. A metre is thirty-nine inches and a-third (39·37), and it was sub-divided by the French philosophers into one thousand millimetres, one hundred centimetres, and ten decimetres.

The hundredth of a metre, which is called a centimetre interests us, more especially since it is the immediate parent of the gram. The weight of a measure of water, exactly one centimetre high, and one centimetre broad, and one centimetre wide—or, in other words, the weight of water that fills a cubical measure of exactly one cubic centimetre—was taken as the new unit of

weight. This unit of weight is called a gram, and hence a gram and cubic centimetre are one and the same thing when water is concerned. They are to each other as the ounce avoirdupois is to the fluid ounce. To be particular, we ought to mention, perhaps, that the gram standard was arrived at on the supposition that water is taken at its point of maximum density (4° C).

Since the standard metre and gram were fixed, there has been some discussion upon the original correctness of the measurements of the earth, and there is very little doubt that the data assumed by the French geometricians are incorrect, and therefore the measure they adopted is also proportionately incorrect. But this matters little, since no one cares whence a standard is derived, so long as all are agreed to acknowledge that standard. And, as we have said, throughout the whole world of science there is now unanimity on this score. They acknowledge only one measure—the metre; and only one weight—the gram. Or put it more correctly, perhaps, the universal standards are the gram and the cubic centimetre.

The old-fashioned photographer, like the old-fashioned chemist, has still a lingering fondness for the old-fashioned British weights and measures; but the belief in them must go as surely as the tradition that one Englishman is equal to three Frenchmen. The simple, universal language of grams and centimetres is so explicit and so intelligible to all who will bring an unprejudiced mind to bear upon the subject, that it is only wonderful we have stuck so long to ounces, drams, and grains in English manuals. Mr. Arnold Spiller's lessons in elementary photographic chemistry, which was published last year have been translated into several languages, no less because the quantities and measurements are given in grams and centimetres, than on account of its intrinsic value, great as this may be. A Portuguese rendering of Mr. Spiller's work was in our hands the other day; and in a criticism of the French edition, we read these words: "En terminant, nous ferons remarquer que M. Spiller, dans ses calculs,

se sert des notations du système métrique; il engage vivement ses collègues anglais à renoncer à leur once et à leur grain. Nous ne pouvons qu'applaudir à cette excellente idée, et souhaiter qu'elle se réalise promptement, afin de faciliter l'échange des communications et des formules entre les deux pays."

The International Geodetic Congress, which has recently closed its sittings, and which has come to the conclusion that it would be well if all nations adopted the same longitude calculations, recommending, moreover, that the longitude of Greenwich be adopted by all the world, added a rider to the effect that if this concession were made to Great Britain, then we should no longer stand out of the ring in respect to metrical measurements. In being the only one among the big nations which has not adopted the metrical system, the United Kingdom adopts a stand-still policy ridiculous in the eyes of all intelligent beings. For, as we have said, our advance guard in the persons of British scientific men have long since seen the advantage of an universal system of measurement, and have not been slow to avail themselves of it.

Still, all changes must be gradual, and the photographer, we must admit, is placed in an unfortunate position. The apothecaries' weights and measures he has by him serve his purpose very well, and as he employs them daily, it is not surprising that when he recommends the use of a new developer or toning solution, he should express the quantities by the measurements he uses every day. Still, there is no reason why, when he is fitting up his laboratory, he should not buy a few gram weights and purchase a cubic centimetre measure. These are as cheap, if not cheaper, than appurtenances only fitted for use in this country, for a demand for them exists all over the world, and no apparatus maker or dealer can afford to be without them. We repeat, the whole matter is but a question of time and nothing more. All scientific experimentalists among photographers must be conversant with grams and cubic centimetres, and those who practice much with

foreign formulæ require gram weights and glass measures divided into cubic centimetres. Indeed, the simplest of all methods, as we have before mentioned, for converting fluid ounces into cubic centimetres, or *vice versa*, is simply to pour the liquid from the ounce measure into the metrical measure, and as the latter costs but a couple of shillings, the plan, beyond being a cheap and trustworthy one, obviates many troublesome calculations. In the same way, if you are in possession of a few gram weights, you can, by weighing them against your British weights, compare them without trouble. But the time will come, and that very shortly, when no such comparison will hinder the photographer's work, and when he, like his senior brother the chemist, will adopt but one measure and one weight in his laboratory.

Bromide Plates for Transparencies.—By compounding a gelatino-bromide emulsion with citrate of silver, Mr. J. B. B. Wellington has obtained plates well adapted for making transparencies, whether for decorative purposes or for the lantern. If the exposure is short, say 30 seconds at a distance of six inches from an ordinary fish-tail burner and the plates are developed with an oxalate developer free from bromide, a coolish grey tone results; but if, on the other hand the exposure is increased very much—say fifty fold—and a sufficient amount of bromide is used in the developer, pictures having a bright red tone are obtained. By varying the exposure any required intermediate tone can be obtained.

Mr. Wellington's emulsion is made as follows:

A

Nitrate of silver, . . .	50 grains.
Heinrich's gelatine, . . .	20 "
Water,	5 ounces.

B

Potassium bromide, . . .	40 grains.
Heinrich's gelatine, . . .	20 "
Water,	5 ounces.

Convert the silver nitrate into silver citrate by adding sufficient citrate of ammonia to precipitate all the silver, add sufficient am-

monia to redissolve the precipitate; then add the gelatine and dissolve. Mix A and B at 150° F., allow to cool, then thoroughly wash.

The correct formula of developer for J. B. B. Wellington's gelatine transparencies is as follows :

No. 1.

Oxalate of potash, . . .	4 ounces.
Chloride of ammonium, . .	40 grains.
Water,	20 ounces.

No. 2.

Sulphate of iron, . . .	4 drams.
Citric acid,	2 "
Water,	20 ounces.

Equal parts of 1 and 2 for black tone; when red tone is required add various quantities of restrainer—

No. 3.

Bromide of potassium, . .	160 grains.
Water,	1 ounce.

Maximum quantity of restrainer is 60 minims to each ounce of developer, this proportion giving very red tone. Less of No. 3 is required if less red tone is wanted.

Photo. Block Printing Methods.—During the last year or so there has been great activity in Europe as regards the production of type blocks from ordinary photographs, and there are now in the market several methods which are being worked with commercial success. The excellent blocks made by Meissenbach at Munich appear, like those which have for some years since been made by Ives in Philadelphia, to depend on the mechanical translation of the Woodbury relief into a series of closely packed lines or dots, and quite recently Zuccato has introduced some new methods by which this translation can be effected. His patent claims, were filed on the 28th ult., and the following is an abstract of the processes.

According to the first method, a plate of type metal, or similar substance of moderate hardness, is moulded or planed so that its surface is covered with a series of V-shaped ridges, closely packed together, and

this plate is inked by a roller or dabber. A sheet of thin transfer paper is now laid over the inked plate, and on this is placed the relief, after which pressure is applied by the hydraulic press. Under these circumstances the inked ridges become crushed down more or less according to the relative thickness of the various parts of the relief, and the imprint of the more or less flattened ridges is transferred to the paper with remarkable clearness of outline. The impression in transfer ink thus obtained is now transferred directly to a metal plate, and this is etched, so as to leave the lines in relief. By this means a typographic block is obtained, which presents many of the characteristics of a wood-engraving, the lines, although varying in width, being continuous except in the extreme whites, and where they unite to form the solid blacks; but the most important feature is the circumstance that the clear, sharp boundaries of the lines serve to give the blocks most excellent printing qualities.

In other cases, Mr. Zuccato inks a piece of silk or other network, and interposes it between a zinc plate and the relief: a piece of paper being placed on the other side of the inked gauze if necessary. In this way, the stipple depends on the crushing down of the threads, and a cross-barred picture is obtained. Mr. Zuccato's third method consists in pressing the reliefs against a metal plate upon which an ink stipple has been imprinted, and the unequal spreading out of the ink determines the production of the picture.

Printing in the Press Directly from the Woodbury Relief.—Ives' method of obtaining a transfer or mother print from a Woodburytype relief is doubtless familiar to your readers, the impression being made from an inked relief upon paper which is covered over with minute pyramidal projections; these being entirely crushed down and completely inked by the thicker parts of the relief, but only just tinted upon the tips where the relief is thin. A suggestion was made in the *Photographic News* to apply the Ives principle to rapid printing directly from the relief, this being mounted on a thick piece

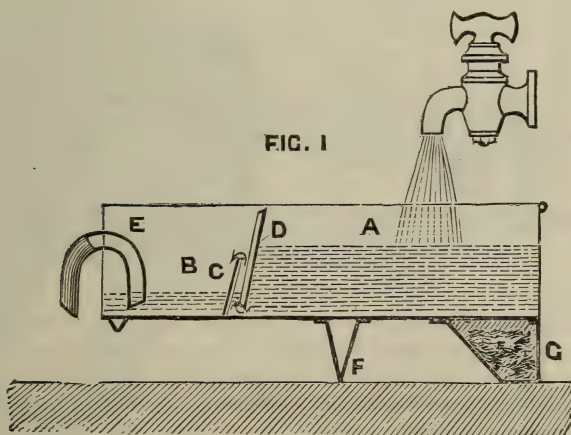
or block of plate glass and set along with type on the bed of a printing machine. The article referred to says:

The Woodburytype relief was mounted like a surface block by the side of some type matter on the bed of a printing machine, and the machine was fed with paper which had been grained by pressure, just like ordinary book-binder's cloth. Under these circumstances prints were produced with a perfect gradation of half-tone, from the more or less complete crushing down of the pyramidal projections upon the paper by the inked relief; while the impression from the type itself was clear and sharp. It may be mentioned that, as an article of commerce, the grained paper should only cost a trifle more than plain paper, and it is possible to see important commercial applications of the method just described. Among these we may mention its applica-

tions to the decoration of book covers (leather or cloth), linen, calico, or even wood, it being merely necessary to impress a suitable indented grain in the first place.

A form of card printing machine exists, in which a band of silk that passes between the type and the paper carries the ink supply; the impression being in reality a set-off from the inked band. By mounting a Woodburytype relief in such a machine, and printing on grained cards, photo-mechanical prints might be produced with a surprising degree of rapidity, and type matter could be printed side by side with the photograph—a business card, we will suppose, with a photographic view of the premises, or a visiting card with a portrait.

A New Washing Trough for Prints.—The trough is divided into two compartments, of which the first or washing compartment receives a constant stream of wa-



ter that flows from the one compartment to the other, whilst the second compartment is provided with an outlet siphon or valve. The trough is so balanced that when the second compartment fills to a certain height the trough assumes suddenly a tilted position, thereby violently agitating the water among the prints or materials being washed, separating them and starting the syphon or opening the valve. The arrangement is such that the outflow shall gain on the inflow, so that the water will be run off from

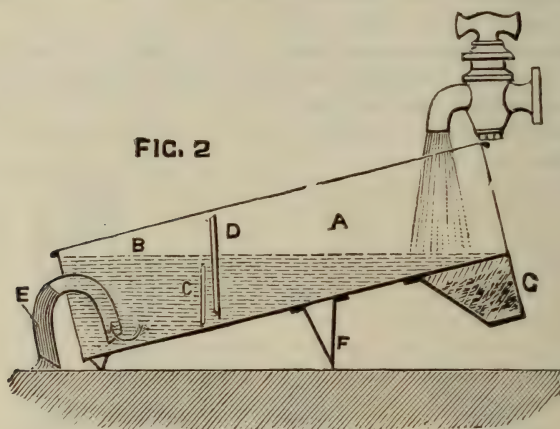
the second compartment faster than it flows into the first, until, the second compartment having been almost emptied, the counterpoise preponderates and returns the trough to its horizontal position, again agitating the water, etc., whereupon the trough refills and the same operation is repeated.

Figure 1 is a longitudinal section of the trough in its normal position, and Figure 2 is a similar section showing the trough in its tilted position. The same letters of ref-

erence indicate the same parts in both the figures.

A and B are the two compartments of the trough separated by a partition, C, which rises from the bottom to within a certain distance of the top of the trough. The compartment, A, is the larger of the two, and in it are placed the prints or substances to be washed. D is another partition dipping into compartment A, at a short distance from partition C, and reaching from the top of the trough to within a short distance of the bottom, so as to compel the water at the lower part holding in solution the salts washed out (and which being of

greater specific gravity sink to the bottom of the trough) to pass out through the space between the two partitions, C D, into compartment B. E is a syphon of which the short leg dips into compartment, B, and reaches within a very short distance of the bottom, whilst the bend of the syphon is sufficiently below the top of the trough to ensure the syphon being started automatically when the trough assumes the inclined position, Figure 2. The longer leg of the syphon extends sufficiently below the bottom of the trough to ensure the action of the syphon continuing until the compartment, B, is sufficiently emptied. The trough



oscillates on a transverse fulcrum formed by a downwardly projecting rib or plate, F, fixed or hinged to, and extending across, the bottom of the trough, and in its normal position (Figure 1) the trough rests partly on the fulcrum, F, and partly on a downwardly projecting part, G, at the end opposite to the syphon, which part, G, is sufficiently loaded to preponderate and to bring the trough back to its horizontal position when the compartment, B, is nearly empty, but is

overcome when the compartment, B, fills up to about the top of the partition, C, the relative position of the partition, C, and of the fulcrum, F, being such as to enable this action to take place by the alternate preponderance of the weight, G, and the full chamber, B. The compartment, A, receives a constant supply of water, so regulated that the inflow is somewhat less than the outflow through the syphon E.

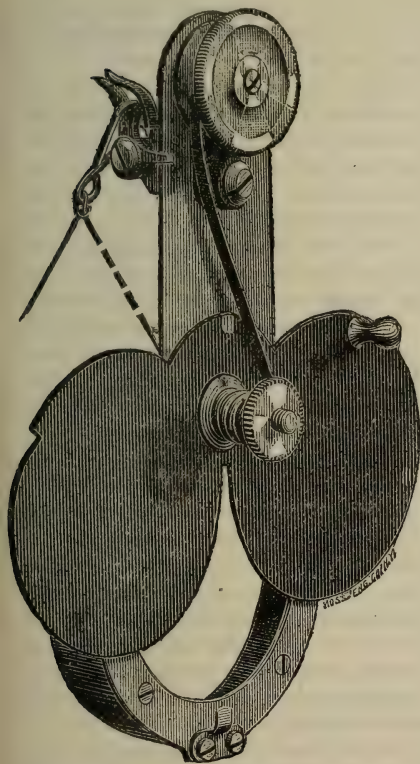
An Amateur Photographic Society for
New York.

A MEETING has been called for Friday evening, March 28, to assist in the formation

of an Amateur Photographic Society for New York. It is to be held under the auspices of Mr. F. C. Beach, of the *Scientific American*.

The Prosch Instantaneous Shutter.

THE Prosch Instantaneous Shutter, though new to most of our readers, is not an untried instrument, having been tested by some of our leading amateurs as well as professional photographers during the past season, and it is conceded by them to be the best shutter for instantaneous work yet devised.



It does not jar during an exposure; it is perfectly light-tight; its speed can be regulated at will; it will give most exposure to the foreground, or background, as desired; it is light and compact, and all its parts are in plain sight. It requires no alterations to either the tube or camera to attach it, as it fits over the hood of the tube by a velvet-lined collar. The shutters are manufactured directly under the supervision of the inventor, Mr. Cyrus Prosch.

It may interest some to mention that the inventor is a son of one of the earliest, and by some claimed to be the first one to make a photographic picture, Mr. Geo. W. Prosch.

We append a short description to better enable our readers to understand its operation and merits.

In revolving, the two leaved fly on the face of the shutter makes the exposure. In its proper position, as shown in the cut, the foreground gets the most exposure; but if the shutter is reversed the background or sky gets the most.

The coiled spring at the top, the free end of which is attached to the fly, is the propelling force. The speed is regulated by a turn of the milled-head nut on the axis of the fly.

The peculiar arrangement of the propelling spring, by which but very little of its force is exerted on the fly when in a locked position ready for an exposure, causes the fly to release gently and start without jar; the only possible jar is after the exposure is made, when the fly is brought to a dead stop against a buffer at the top.

The back of the fly is covered with velvet, and is made to hug closely the face of the shutter, by passing under the small roller at the bottom. Any leakage of light is therefore impossible.

The release catch is novel, and very efficient in releasing the fly without jarring the shutter, and is always reliable. By competent judges it is held to be superior to a pneumatic release.

A trigger having a guard over it is actuated by a wire loop* slipped between them; the loop has a cord of suitable length, which, when pulled, slips out between the trigger and guard, depressing the trigger and releasing the fly.

A focussing stop is provided, to hold the fly in open position for focussing.

The shutters fit over the hoods of lenses by means of a velvet-lined collar; therefore no alteration or mutilation of either tube or camera is required.

The shutters are made in three standard sizes, but larger or smaller ones are furnished to order at reasonable prices.

No. 1.	To fit hoods of lenses not over $1\frac{1}{2}$ inches, . . .	\$7 00
No. 2.	To fit hoods of lenses not over $2\frac{3}{8}$ inches, . . .	7 50
No. 3.	To fit hoods of lenses not over $2\frac{7}{8}$ inches, . . .	8 00

An accurate fit can be had by sending with order a strip of paper cut just long enough to pass around the hood.

Clouds in Landscapes.*

BY DR. C. LINESBURG.

IF we compare the former works of our landscape photographers with their present productions we have to admit, and with pleasure, that remarkable improvements have lately been made. Although Germany as well as England has furnished good work of this class for some time past, it cannot be denied that in two points both have differed essentially from works of art: *too much dark green and the almost entire absence of living objects*. It is the latter particularly which furnishes life and gives the proper effect to the scenery, and, where missing, a feeling of solitude overcomes us. This want of life may be excusable in some pictures, but generally the observer is not satisfied, and wants suitable figures added to the beauties of nature.

Since the advent of dry plates the grouping of subjects in a suitable landscape has been facilitated to a great extent, enabling the photographer to capture even moving objects. English and American photographers especially have shown a great deal of taste in this respect; and we might say, that where the German picture is more technically correct, those of the English and American photographers show more artistic execution.

The reason for this is, that in England and America this branch of photography is mostly in the hands of intelligent amateurs, who with pride and pleasure take an interest in the advancement of photography, whereas in Germany the production of these pic-

tures is mostly in the hands of professionals.

But, if the harmony and composition of a good landscape shall be complete, there is another essential requirement—the *sky, the clouds*; and as water has been called, not without reason, the *eye* of the landscape, so the sky might be called the soul of it. Unfortunately it is generally not possible to get satisfactory cloud effects with the same exposure, the much greater intensity of the sky giving an under-exposed landscape, if the timing of the former is correct.

Several attempts have been made to remedy this by putting so-called cloud diaphragms on the lens, either in a vertical or slanting position, but with only partially good results. The so-obtained clouds are mostly too indistinct.

The old way of covering the entire sky in the negative, then making a print and shading the sky with a paper mask gradually from light to dark is still less successful.

Although a cloudless sky may be good for some landscapes, it will very seldom help to beautify the view; and a handsome cloud formation is almost as essential as the landscape itself. The best proof of it are the works of all our eminent artists.

Which is now the best method to obtain a beautiful sky? *By reproducing nature photographically, i. e.*, a direct picture is made from some fine cloud effects and this is transferred to the landscape.

Some of our English friends have given several practical hints for the production of suitable negatives, as well as the making of such combined landscapes.

The outlines of the landscape forming of course the dividing line between that and the sky, the most simple way is, to take a separate picture of the latter immediately after taking the landscape, provided some nice and suitable cloud formations can be had; and if this is not the case, then it is better to choose from some suitable negatives previously provided for.

But as *direct* cloud negatives have generally only strong high lights and very deep shadows, prints made therefrom would be too deep and give the picture a hard and

* Translated by H. D. for the BULLETIN.

dark appearance. *Paper negatives would therefore be the best for that purpose; they are more easily manipulated and give softer prints than is possible with glass negatives.*

The most simple way of making such paper negatives is as follows:

First of all a very strong print from the original is made upon albumen paper, and toned and fixed in the usual way.

From such a print, likewise upon albumen paper, another print is made, which of course will be a negative. To obtain the necessary strength the paper is laid with the *back* upon the positive. In this manner the negative is produced *in* and not *upon* the paper. It is then toned and fixed, and, to obtain the necessary transparency, soaked in paraffine or wax. This is done by putting paraffine or wax into a tin dish placed over a vessel with hot water. To remove the surplus of wax or paraffine, the print is laid between filtering paper and pressed with a hot flat iron.

Canada balsam one part and three to four parts of oil of turpentine, brushed on both sides of the print once or twice and dried, will increase the transparency. Such negatives give handsome and soft prints.

To print now from the cloud negative upon a landscape, the sky of the latter negative, if it *should not be dense enough*, is covered. Of such a plate a print is made. Then the outside lines of the landscape are marked upon the cloud negative, and the part representing the landscape covered with paint or some other suitable opaque material upon the side which *does not come in contact* with the other print. In this way the hardness of outline is avoided. The cloud negative is then fastened upon a glass plate, placed upon the landscape negative, and is now ready to make the print.

There is one thing certain. In whichever manner such landscapes with clouds have been produced, the latter should not be wanting in any of them. They increase the artistic value of such views and give life and beauty to an otherwise monotonous picture, no matter how photographically correct in other respects.—*Deutsche Photographen Zeitung.*

Portraits in Crayon on Solar Enlargements.

IN this little treatise concise instructions in the art of making crayon portraits on solar enlargements are given.

Written in a terse and pleasing style the reader can scarcely fail to comprehend and remember the instruction it contains.

The beginner, by adopting its timely suggestions will, it is said, in a short time be enabled to produce excellent crayon portraits.

This is the only book published upon this subject, we believe. It costs but fifty cents; and if any one doubts, let him prove the veracity of these statements by a purchase.

Try the Tropical Dry Plates.

Drowned.

WE never felt so much like being drowned since we first learned to swim as when we looked at some 5 x 10 panel photographs from our esteemed friend Landy, of the submerged city of Cincinnati. Positively, we can feel the water buzzing in our ears yet, as we think of the surging waves burying the busy thoroughfares and putting to shame the Venetian capital itself. We shall hang them out for the curious to gaze and gossip over, and to wonder how they ever managed to draw the water off again.

Six Photographic Views of the Last Comet.

MADE by Dr. Gill at the Cape of Good Hope, have been presented to the Paris Observatory. They are said to be better than all previous views of that kind, the stars in the middle of the picture, notwithstanding the long exposure, requiring for the sixth negative 140 minutes, being very sharp. Over fifty stars are visible behind the tail of the comet. An almost continuous cloudless sky has been to a great extent the cause of this unprecedented success, aside from the skill displayed by the photographer.

Chicago Amateur Photographers' Club.

THE regular meeting was held at their room, 229 State St., Wednesday evening, Feb. 18, 1884, Dr. GARRISON, Pres. in the chair.

About sixty members and others were present, including quite a number of stock dealers and dry plate makers from other towns, who happened to be present in the city in attendance on the meeting of the Stock Dealers' and Dry Plate Makers' Associations respectively; likewise quite a number of city, suburban and professional photographers, solar printers, etc., most of the latter gentlemen being members of the Chicago Photographic Association. We were also honored by the presence of Prof. Carhart, of Evanston, while our own members turned out in force.

On motion the reading of minutes were dispensed with and several gentlemen elected members.

Mr. BURNHAM, on request of the chair, explained the method of working the "Detective Camera," a specimen of which was on exhibition. Mr. B. said he had tried some views with it to-day, but the light was bad for instantaneous work, and the results not very good; this, however, was no disparagement to the value of the instrument, with which he knew excellent work had been done, its great advantage consisting in the fact that with it you can take a picture (instantaneous, of course) of any subject (groups etc.) that may present itself during a walk or ride, without any preparation, and without the subject (or bystanders) being aware of what is going on; while it is no more an incumbrance than a lady's hand satchel *

Mr. DOUGLASS, on behalf of Mr. Manarse, optician, exhibited a field-glass camera of French manufacture, which is a pocket instrument, combining the functions of a binocular field-glass and camera in one; to this end the eye-pieces and object glasses are made readily detachable by

means of a bayonet joint, and in place of the former two photographic objectives are inserted, while one of the latter is replaced by a ground glass, and the other by a plate-holder; you then turn the instrument wrong end to, and direct it to the view you wish to secure, observing the same on the ground glass, and focussing by the usual milled head of the field glass; when ready, a trigger is pulled, and an instantaneous view obtained. Of course, the resulting negative is very small, its size being governed by the object-glass aperture, but it could be enlarged readily by any of the well-known processes, and the extra outfit to be carried over and above the field-glass proper is very small.

The PRESIDENT, after calling Dr. Andrews, V P., to the chair, proceeded to read a paper on the relation of various colored glasses and other media for dark-room illumination.

Best Light for the Dark Room.

About two hundred experiments were performed during a period of six days on the following kinds of glass and combinations thereof: ruby red (flushed). orange, green with faint tint of yellow, green very deep and pure color, green cathedral glass with distinct tint of blue, green cathedral glass, deep green with very faint tint of yellow, green cathedral glass with decided tint of yellow, olive green cathedral glass, brandy-colored cathedral glass, lemon yellow cathedral glass, Carbutt's ruby paper, aniline red paper, post-office yellow paper, acme red paint on glass, Winsor & Newton's rose madder on glass, etc. These experiments were performed in groups of seven, in such manner that while the time of exposure, intensity of light, sensitiveness of plate and strength of developer, as well as the length of development, were exactly equal, the results served not only as standards for comparison, but as checks against possible errors. Exposures were made both to cloudy daylight and to artificial light during times ranging in the first case from half a second to five seconds, and in the second case, from 30 seconds up to five minutes.

* One of Schmid's patent Detective Cameras.—ED.

The several kinds of glass and combinations thereof mentioned were furthermore tested by a very powerful spectroscope.

As a tabular statement of all the experiments performed, with the results obtained, would be a very ponderous document, I shall content myself with giving the practical results and conclusions.

The values assigned to the several kinds of glass, and to combinations of the same, relate entirely to their ability to intercept those rays of the spectrum capable of affecting a pure bromide of silver gelatine plate, and have no reference to their capacity to transmit rays useful for vision in the dark room, a subject which was considered later.

Ruby red glass, single thickness, offers but little protection. A plate will be heavily fogged beneath it in half a second of daylight, and in three seconds will be rendered completely black and opaque. The same results will be obtained by artificial light (a student's lamp was employed) in from thirty seconds to two minutes.

Red glass, two thicknesses. A distinct impression of cloudy daylight will be made through this combination in one second, but at the end of three seconds will not develop up to more than one-third of complete opacity.

Double red with single orange proved to be slightly better than double red alone.

Red, and especially double red, with green, prevent the passage of both luminous and actinic rays.

Green glass is worse by far than red, and those varieties having a yellowish tint, and especially those having a bluish tint, are perfectly worthless.

Green with orange, if the green is deep and pure, is better than single red, and nearly equal to double red glass; but if the green glass is off color by reason of either a bluish or yellowish tint, it is inferior to single red glass. Double green with single orange proved to be rather better than double red glass, and this held true when one of the pieces was slightly tinted with yellow.

All the varieties of cathedral glass named proved to be absolutely worthless, a result which the spectroscope clearly foretold.

Carbutt's red paper is about equal to single red glass, but is inferior to the orange green combination. This paper, doubled is about equal to double red glass, but is then nearly opaque to luminous rays also.

Aniline red, acme red, and rose madder (oil color) are of no value whatever.

Having found the choice, so far as opacity to actinic rays is concerned, to lie between the double red glass and the orange and green, it was ascertained that the latter combination with the green glass doubled was rather better than the double red. To ascertain the relative values of these combinations for practical illumination in the dark room, I caused duplicate windows, glazed in the one case with double red glass and in the other with orange and double green glass, to be made for my dark room, which was then tested by both day and artificial light. The result was decidedly in favor of the double red glass. Printing which could be read easily at a distance of two feet from the light through the double red glass could not be read at all at a distance of six inches from the same light through orange and double green glass.

The question then arose whether light sifted through two thicknesses of red glass was really any better than the same amount of light transmitted by a single red glass. To decide this point light was allowed to pass through a single red glass during *one* minute upon a gelatine plate and upon another part of the same plate covered by two thicknesses of the same glass the same light was allowed to act *two* minutes. The plate after development showed that two thicknesses of glass had rather more thoroughly obstructed the chemical rays than was effected by the single glass; yet the difference was too slight to be regarded as important. It therefore follows that a dim light, or short exposure to strong light, through single thick red glass is practically as safe as exposure to the same amount of light after transmission through two thicknesses of red glass.

While, therefore, red light appears to be safer than any other color having the same value to vision, it is by no means destitute

of power to initiate the decomposition of bromide of silver. Indeed, a positive was produced in two minutes and a half by the light of a student lamp distant ten inches, through two thicknesses of the best ruby glass. On development the plate was found to be rather over-exposed. Of course the same result could have been obtained in about one minute through a single pane of red glass.

The conclusion is therefore forced upon us that up to the present time we have no really safe light for the dark room, and since every ray in the spectrum has been tried, the probability seems to be that we never shall have one. The only practicable method approximating safety is to expose plates in manufacture, handling and development as little to any kind of light as possible. Plates can be made, handled, and developed in almost perfect darkness. Of course, a glance at the plate in the various stages of these operations is necessary, but the long continued exposures to which plates are frequently subjected, under the impression that the light is "non-actinic," is a delusion to which is probably due most of the failures in dry plate photography. The fault does not altogether lie with the operators. On the contrary, many of the plates in the market are hopelessly fogged in the factories, while few if any are really as free from this defect as it is possible to make them.

It is proper to state that in performing many of these experiments, and especially in estimating the result, and in devising check experiments to guard against and eliminate possible errors, I have been favored with the valuable aid of Mr. S. W. Burnham, while to the untiring energy and kindness of Mr. G. A. Douglass I am indebted for many varieties of glass and paper employed.

Mr. Garrison writes: I may add that since the meeting referred to above, I have by further trials satisfied myself that if the green glass is sufficiently deep and pure in color to make the combination of it and orange of value in excluding the actinic rays, the illumination is worse than that

obtained through ruby glass. A very thin or pale green glass with orange gives excellent illumination, but is most inefficient in the exclusion of actinic rays. Therefore I remain of the opinion that red light, bad as it is, is still by far the best we have.

H. D. GARRISON.

After the conclusion of this paper Dr. Garrison exhibited the apparatus with which most of his experiments had been conducted, and observed that there was a vast difference between the various samples of green glass in the market, as to their power of obstructing actinic light; the best sample he had so far encountered having been found by Mr. Douglass. The shade of green should be such that the blue and yellow components thereof were evenly balanced, so that it should not incline to blue on the one hand, nor to yellow on the other.

Mr. CARBUTT said he had made quite a number of experiments on dark room illumination recently; he had tried pot metal, orange glass and orange tissue paper, ruby glass and tissue paper; but he had finally settled down to pot orange glass, coated on one side with dark red lacquer, and on the other with matt or ground glass varnish; this he found a nice light to work by, and safe enough for ordinary developing operations. Mr. Carbutt exhibited his latest improved "multum in parvo" lantern, as fitted with the double coated orange glass he had just described. The improvements consisted in so arranging the front that the glass can be slid in and out from the outside, and the addition of a ruby light in the door opposite to the opal glasses. Being asked by Mr. Burnham whether he had made any comparative tests of his new light, Mr. Carbutt said that he had not, but he had developed some very sensitive plates by it without the least fog, and this he considered a good test of its suitability for the intended purpose.

The CHAIR now announced that the meeting would soon adjourn to another apartment, where Mr. Carbutt would demonstrate the making of transparencies on

his special transparency plates, by the light of his "multum in parvo" lantern, after which Mr. Gentile and the Secretary would show them how to make enlargements from small negatives on Anthony's gelatino-bromide, or "rapid printing" paper. While the gentlemen named were making their preparations, however, he would cause to be passed around for their inspection a few enlargements on the paper in question, recently made by Messrs. Gentile and Davies, premising that both of them were beginners at this branch of the art, and the members and guests present must not imagine that the results before them were a fair criterion of the value of the process.

After examining these prints the members proceeded to the adjoining room, which had been fitted up for the purpose, and watched with much interest the operations of transparency printing as demonstrated by Mr. Carbutt, who made a number of specimens, some quarter size (suitable for lantern slides), and some $6\frac{1}{2} \times 8\frac{1}{2}$, using his published formula for the development of these plates (a modification of the oxalate). The results, when fixed, were very fine.

As soon as this part of the exercises was concluded, Messrs. Gentile and Davies proceeded to give a practical illustration of the *modus operandi* for making enlargements on Anthony's gelatino-bromide paper. Mr. G. used a very powerful but somewhat bulky apparatus devised by himself, the source of light being a "pony" headlight, with a large argand burner and parabolic reflector of about sixteen inches diameter; in front of this, but at a distance of over three feet, was a ten-inch solar condenser set in the back of a camera, to the front of which was attached a half-plate portrait lens, the negative, of course, being placed between this latter and the condenser. With this Mr. Gentile made two life size prints from cabinet heads.*

The apparatus used by the Secretary was of much smaller and less expensive character, and therefore better adapted to the wants of amateurs; it is calculated to take

negatives of stereoscopic size, and to enlarge them, or smaller ones, up to anything between (say) $6\frac{1}{2} \times 8\frac{1}{2}$ and 16×20 ; with slight alterations in platform and screen it would, however, enlarge considerably beyond the latter size. As shown on this occasion it was specially fitted to take a full sheet of "glossy rapid printing paper," ($12\frac{1}{2} \times 19$.) The apparatus consists of a wooden box, lined with zinc for protection against heat, containing a kerosene lamp with argand burner and fitted with a pair of 5 inch lantern condensers; the objective is a quarter-size portrait, and a sliding board covered with paper serves as a focussing screen, the sensitive paper being clamped thereon by a hinged frame, after the focus has been obtained. With this arrangement a full sheet enlargement from a stereo. view (architectural subject) was made with fifty seconds' exposure. Negative rather dense.

Both the exhibitors developed and fixed the prints before the meeting, Mr. Gentile using the old developer which Mr. Carbutt had been operating with, while the Secretary made use of an oxalate developer according to the formula furnished by the manufacturers of the paper. It may be remarked here that the Carbutt developer gave results at least as good as the others. The paper used by both demonstrators was the glossy. Each operator became the center of a closely observant group, whose interest in the new branch of photography was well indicated by the continual stream of questions.

The lateness of the hour prevented more than the three pictures mentioned being made, but these, albeit made under some disadvantages and by beginners in the process, served to convince nearly all present that the paper was a "big thing." It is a curious incident that some of these persistent seekers after information were men commercially engaged in solar printing.

The meeting adjourned at a late hour (11 P. M.) after passing a vote of thanks to those who had contributed to the evening's entertainment.

F. H. DAVIES, Sec'y.

* See Anthony's Enlarging Camera, on another page.—EDITOR.

Rochester Photographic Association.

MONDAY EVEN'G, Feb. 11, 1884.

PRESIDENT J. M. FOX in the chair.

The minutes of last meeting were read and approved, and after some routine business the subjects from the question-box were presented by Mr. S. Miller, chairman of the committee, as follows:

1. Why is albumen paper more difficult to work in winter than in summer, and what is the cause of the albumen leaving the paper after fixing?

2. Is it injurious to dry plates to let them remain long in the hyposulphite solution? What would be the result?

3. How long should gelatine plates wash before and after developing before fixing?

4. Is it better to retouch gelatine negatives before or after varnishing, and what plan will give the best surface for retouching?

Mr. MILLER said he thought printers paid too little attention to the demands of the paper to insure the best results. In winter especially the temperature is liable to be rather low. Now the silver bath for positive printing as well as the room in which the work is done, should not be less than 60° Fahr.; printers should regulate the temperature of all solutions and try and work uniformly. It is not right to take prints from very cold water in which they were washed and place them in a hot toning bath. Albumen paper newly made is more liable to soften and leave the paper after such treatment or to show woolliness.

The PRESIDENT. At what stage of the operation does the albumen leave the paper?

Mr. BROWN was of the opinion it occurred in the fixing. He thought the hyposulphite of soda should not be made too strong nor used very cold.

The PRESIDENT exhibited a print which was made on a 10-grain silver bath. The paper was floated three minutes; it was dried thoroughly, and fumed half an hour. This is only an experiment to show that the albumen has not left the paper.

Mr. NELSON preferred his silver bath fifty or fifty-five grains to the ounce, with the addition of a little alcohol. He prefers it to test neutral or *very slightly* acid; add warm water to the first washings, and use the toning bath also warm.

Regarding the second question Mr. Miller said he did not know how long a gelatine plate could be left in the hypo. before it would spoil. He had left a negative in the fixing bath over night by mistake; still it came out all right. The bath was rather weak, however. He would not advise leaving plates in the fixing solution longer than necessary. If the bath is old it becomes charged with impurities, which cause black spots on the surface of the plate. While the negative is fixing it is a good plan to move it occasionally or use an upright fixing bath.

Third question. Mr. M. said it is not necessary to wash plates before developing; still he prefers to do so—the developer flows more evenly over the plate than if it was dry; and moreover, there is less tendency to form bubbles. The plate should be thoroughly washed before placing in the fixing bath, otherwise pyro would be carried into the bath; lay the plate down under the tap and let it have a good washing before fixing.

Fourth question. Mr. Miller said there are many advantages in retouching gelatine negatives before varnishing. An extremely freckled face, for instance, may be worked tolerably well on the gelatine surface and then finished after varnishing. Work can also be done on copies of old pictures, spots and streaks cut out, and many imperfections removed which could not be so well done after the negative is varnished. It is the best plan to dilute the ordinary negative varnish, which is too heavy for gelatine plates. The usual surface caused by rubbing the varnish on the gelatine surface with pumice-stone is a good one.

The thanks of the Association were voted to Messrs. Anthony for the BULLETIN, and to Mrs. J. H. Fitzgibbon for the *St. Louis Photographer*.

Adjourned.

W. J. LEE, Sec'y.

Association of Operative Photographers of New York.

{ NO. 392 BOWERY,
{ NEW YORK, March 5, 1884.

THE regular meeting of the Association of Operative Photographers was held on March 5, President SCHAIÐNER in the chair.

In the absence of the Secretary Mr. POWERS, on invitation from the chairman, acted *pro tem.*

The minutes of the previous meeting were approved as amended.

Pres. SCHAIÐNER. We have arranged no topic for discussion to-night, but if any gentleman has anything he would like to say, we shall be glad to hear him.

Mr. JAHR. I came here to-night to learn and hear. But there is one topic to which I think many photographers' attention is attracted; that is, the question of how best to light our dark rooms. I should like to ask the members of the Society whether they have tried the plans recommended. Mr. Jahr alluded to several experiments he also had made.

Mr. BUEHLER. I would certainly hail with all my heart something to take the place of ruby light, and I am sorry that Mr. Jahr cannot exhibit a specimen of the glass he refers to. I read lately in some English photographic journal that the British photographers had turned their attention back to the oxalate developer. Of late I have given up entirely the oxalate developer and worked the pyro.

Mr. JAHR. It will remain open for a good while to come. I am inclined to pyro; with it you can get by shorter exposure exactly the color of a good wet plate negative, a yellowish gray. You can see exactly when you have made the negative how it will print.

Mr. SCHAIÐNER. I would like to ask if yellow is not at times deceptive.

Mr. BUEHLER. It seems that if plates when first developed are put in an alum solution, they are more like wet plates than if you wait until they are fixed and then put in the alum; it takes away the density.

Mr. JAHR. It depends upon the time you have given the plate.

Mr. BUEHLER. Do you think it necessary to have fresh hypo. solutions every day?

Mr. JAHR. I think so; when you dissolve hypo in water it acts like a freezing solution. The temperature is reduced to a certain point and the plate is not so likely to frill. I have made it to-day and used it to-morrow, and the day after it would commence to frill. I immediately threw the hypo. away and commenced again.

Mr. BUEHLER. The longer the action of the hypo. the more it is inclined to frill. Sulphite of soda has a clearing effect.

Mr. JAHR. Soda in itself gives the pyro a nasty green effect. The sulphite gives two advantages at one time—all that yellowish gray color, and it seems to give a finer deposit. If you look with a magnifying glass, by developing with different developers you will find the same plate very different in the grain. Sulphite of soda gives a very fine grain.

Mr. JAHR. It would be of interest to know what might be the percentage of leading photographers in New York who are using dry plates in preference to wet.

Mr. BUEHLER. It depends upon circumstances. I only use them when I have a very lively baby or a dog to take. To-day with a rectilinear lens and a wet plate I took an 11 x 14 in fourteen seconds of a child.

Mr. JAHR. I have seen your work and I think it speaks against you. Your DRY PLATE WORK shows the best prints, and you cannot fail to have success in working the dry plate. In dry plates you must work them regularly. Experience is necessary.

Mr. BUEHLER. I know my wet plates will turn out good work. With them there is no failure.

Mr. JAHR. I think in a few years to come wet plates in their present state will not be worked. You will use smaller stops and lenses of longer focus, and be able to dispense altogether with the head-rest. They will inspire the public with such confidence that a visit to the photographer will be dreaded no more than a visit to a friend.

Mr. SCHAIDNER. Mr. Main, I believe, is an experienced operator in wet and dry plates, and we should like to hear from him.

Mr. MAIN. Nearly three years ago Mr. Notman adopted the dry plates. About the Christmas Holidays he sent me a lot of plates which he made himself. There was great body to them, but they were full of pinholes; we overcame that, and had fine plates, and had no trouble at all in working them. We are using pyro and sulphite of soda. We have a good plate rich in silver. A good plate is worth a good price. You cannot expect to get a good plate without paying a good price.

Mr. JAHR. The making has much to do with richness and with the body of the film. Of course if a photographer is not willing to pay for plate glass, he cannot have a plate covered entirely even.

Mr. BUEHLER. The density of a plate has a good deal to do with its intensity. I have had them that were fixed in half a minute, but they lacked strength.

Mr. MAIN. You may have washed it out of the emulsion.

Mr. BUEHLER. The bromide of silver was formed before it ever touched the washing water, and is insoluble in water.

Mr. JAHR. What is your experience in regard to the finest class of negatives. Can you make them as well on a dry plate as on a wet?

Mr. MAIN. Oh, yes.

Mr. JAHR. There are those who deny that this can be done; but those who saw the splendid heads by Kent 'made on the Eastman dry plate, and exhibited at the last meeting of the Association by Mr. Cooper could see differently. It appears to me that dry plates require a peculiar kind of lighting.

Mr. BUEHLER. I think it is easier to get a negative on a dry plate than on a wet plate, to get a more harmonious picture; the dry plate works so quickly.

Mr. MAIN. If you have a plate that works hard give it a little more exposure.

Mr. BUEHLER. You might give a short time for the dry plate, but give enough.

Mr. SCHAIDNER. I would like to inquire

whether an open or a closed light is the best for dry plates?

Mr. BUEHLER. In our gallery we have not one curtain. It is merely a matter of lighting. There is no difficulty in lighting, provided you light your subject well.

Mr. JAHR. Before the London Provincial Society, in which are some of the best men in the profession, a discussion took place, and just as many were of the opinion that one could light just the same for a dry plate as for a wet one. Others said you could get more contrast.

Mr. SCHAIDNER. Will you be kind enough, Mr. Jahr, to let us know what evening you can come and instruct us more about this light for developing rooms? On the first Wednesday in the month we hold our meeting for discussion.

Mr. JAHR. The first Wednesday in April I will tell you more about this.

Adjourned.

Chicago Photographic Society.

THE regular meeting was held at their room, 229 State Street, on Wednesday evening, March 5, 1884. Prof. GARRISON, President in the chair. The attendance was large.

On motion the reading of minutes was dispensed with.

Messrs. W. Irving Adams, New York, Edward Cope, Philadelphia, J. Sawtelle Ford, C. W. Hobart, W. N. Kidney, I. K. Stevens, all of Chicago, were elected members.

The subject for discussion was—

The Best Light for the Dark Room.

Prof. GARRISON began by observing that he had very little to add to what had already been said. The experiments made seems to show that the choice lay between ruby glass and the orange and green, and while the latter was undoubtedly pleasanter to work in and easier on the eyes—at least, on most eyes—and while it also allowed objects to be seen more nearly in their natural colors, it was inferior to the red, so far as non-actinism was concerned—and better

as to illumination; that is to say, when you raised the intensity of the green-orange glass up to the same illuminating power as the ruby, it was not so safe a light for the plates—this, even supposing that the green glass was the purest and deepest color obtainable; for if you took a sample inclining to yellow or blue, your combination would be very little protection indeed. A bluish or yellowish-green with orange gave splendid illumination, but allowed altogether too much actinic light to pass. The idea had lately occurred to him that perhaps a solution of bromine might cut off just those rays that were capable of impressing a bromide plate, but upon trial in the spectroscope he found it inferior to ruby glass. There was, however, an astonishing difference between different samples of red glass as to the proportion of the spectrum they cut off; here were two samples so nearly alike it was hard to tell them apart by the eye, yet one was very good when tested by the spectroscope, while the other was almost worthless.

Mr. HESLER stated that, when the orange-green light was first proposed for development of dry plates, he got some samples and had since been working with a very deep orange, and found no fogging in developing at the ordinary distance from the window, even when using the most sensitive plates he could obtain. He had tried green and orange, using one thickness each, but found it was not safe. With two thicknesses, a green and an orange, there was no trouble with fog, but there was not light enough to work by. A single thickness of moderately dark green glass covered with three thicknesses of yellow tissue paper was a very pleasant light to work by, and safe enough for all practical purposes, so far at least as development is concerned. He had found the ruby light affected his eyes seriously.

In answer to a question, Mr. HESLER said gas was the source of illumination he employed.

Mr. GREEN showed a negative made by covering different parts of the same plate with various colored glasses, double and

single, and exposing it to daylight for ten seconds. The result confirmed Dr. Garrison's experiments.

Mr. HESLER observed that plates might be developed by a much more actinic light than could safely be used in their manufacture. If they were exposed to too strong a light during manufacture, although when fresh they might work clean, yet as they grew older they deteriorated, by what has been described as the "contaminating action" of light. This he thought was very likely the explanation of the contradictory opinions held by different experimentalists and workers as to the keeping qualities of gelatine plates; for if the plates have not been injured by exposure to light in their manufacture, they are very likely to keep almost indefinitely, while another batch prepared in precisely the same way from the same samples of chemicals, etc., but exposed to stronger light, may soon become worthless.

Mr. GREENE wished to call attention to one point that was brought out by these experiments, viz., the evil of holding a plate up to the light to look through it before and during development. He knew it was a practice only too common, to take the plate out of the developing dish and hold it, probably, close to the window half a dozen times during development. The fact that ten seconds sufficed to print a fully timed transparency by a ruby light should be conclusive evidence of the folly of such a proceeding. They could not expect clear shadows if they were so careless.

Messrs. Max Platz and I. W. Gehrig had been expected to give a sort of lecture on lighting and posing; Mr. Platz, however, he was sorry to say, was prevented by sickness from fulfilling his part of the programme, and Mr. Gehrig for some mysterious reason had also failed to materialize. However, they had with them Mr. Otto Miehle, assistant to Mr. Platz, who would doubtless do his best to supply the deficiency.

Mr. MIEHLE said that he was entirely unprepared to do anything of the kind; it was something foreign to his line of prac-

tice. Posing was a very difficult subject to explain or teach. Posers, like poets, are born, not made. When a subject comes into the skylight, the operator has to make up his mind almost instantly how to pose him or her. Mr. Platz, he might observe, as many of them are doubtless aware, was very peculiar in his mode of working. He generally acted on the impulse of the moment, and made his positions very quickly. It is his aim to make all his positions, unless in peculiar cases, as natural and as agreeable to everyday life as possible. He is strongly opposed to what are known as "photographic" positions, and frequently had some difficulty in persuading his patrons to his way of thinking. Now, in regard to lighting, we do some very peculiar things. Our skylight and side-light are both divided into six compartments, each covered by an opaque curtain; with white drapery we frequently draw down four out of the six, and set a large screen at some considerable distance from the sitter to soften the shadows.

For Rembrandt effects they draw down all top blinds and all the side ones but two, and use just enough reflected light to give transparent shadows. Subjects with sunken eyes, must of course, be set well back from the top light, and in like manner treat each subject according to his or her peculiarities. The head screen is a very useful thing; we also use it in figures. At Ahlborn's we had no opaque curtain, and used the head screen almost entirely.

Mr. HESLER. There was one thing he would like to impress on them. Every photographer should study anatomy, and also make it a point at all times and places—in private houses, public assemblies, places of amusement, out of doors, everywhere—to study faces under all conditions of lighting, and observe the effect of different lights on the same face. Every face has its beautiful side, if we can only *find* it; sometimes it is very difficult to discover it, but it must be our constant study to do so. Light should be your eternal study; but I cannot illustrate this subject without light. The aim should be to get the sitter in as easy a

pose as possible and not aim for "stunning" effects. Do not use too much reflected light; look out that you do not thereby get a false light in the eyes—I have seen many subjects made to appear wall-eyed in this way; sometimes it looks like a carbuncle in the eye. Study where the sitter may be placed to the best advantage. It is not now the custom in the best galleries to use such a volume of light as formerly. Still, in bright weather they use too much, and flat effects are the result. During the months from November to February we use all the light we can get, even with very sensitive plates; but during the summer it is otherwise. If we remember that the sun is at the same altitude at six P. M. on the twenty-second of June as it is at noon on the twenty-second of December, we shall gain some idea of the difference.

In bright summer weather, a light four feet square properly handled is sufficient for a single face. Photographers are apt to think that the more direct the light, the greater the number of reflected lights they can employ the better. This is a great mistake; we want shadows, but they must be transparent. The greater contrasts you can get without losing transparency the better the picture will be. All this you can acquire by diligent study; probably you all know more about it already than I do. A great point is, to get your subjects into a good humor, and then take them as quickly as possible. Let children pose themselves naturally; nothing is more hideous to me than to see a row of children standing up like a lot of sticks. We frequently have trouble in persuading parents to see these things as we do, but firmness and politeness combined will generally carry the day. He could talk all night, but he thought they had listened to him long enough.

The CHAIR then called on Mr. Edgeworth.

Mr. R. W. EDGEWORTH answered, that if he was the Edgeworth alluded to he must beg to be excused.

Mr. GREEN said, if there was no objection, he would like to have the Secretary read an article on the subject by Mr. Leyde, a translation from the German.

Mr. GREEN would like to say a very few words as to the lighting of dry plates. In using these you need no opaque curtain; white muslin, or something similar, should be used; that he thought the great secret of obtaining transparent shadows with gelatine plates. Some years ago Dr. Vogel made some experiments to test the comparative rapidity of the wet and dry. He found gelatine plates five to ten times more rapid than wet collodion on light drapery, but only about three times as rapid on dark. Mr. Kent told them at Milwaukee that he used white curtains, giving plenty of diffused light, and used a hand screen to produce local effects. Thus he got good detail in shadows and good modelling.

In his own peculiar branch, landscapes, Mr. Green found that he had to make more allowance in time for the difference between an evenly lighted subject and one with strong shadows than formerly when working wet collodion.

Mr. JOSHUA SMITH thought the subjects had been pretty thoroughly ventilated already, and declined to add any remarks of his own.

Mr. GREEN would like to hear from Mr. Sherman, of Elgin, who worked by electric light.

Mr. SHERMAN, in reply, said his aim in using the electric light was to obtain as nearly as he could daylight effects. Thus no direct light fell on the sitter, screens being used to soften the shadows. He used the Van der Weyde system, and only one arc light; others were using three or four. He would advise other photographers to take it up. It was somewhat expensive, to be sure, but in his hands, at least, it paid. Would be happy on another occasion to illustrate his method of lighting, etc., if desired.

The CHAIRMAN remarked that, when in London a few years ago, he heard that Mr. Van der Weyde was taking portraits by electric light, and he believed he was the only one then doing so. Feeling a curiosity to see his arrangements, he (the speaker) called several times at his gallery, but was always met by some excuse, such as that

Mr. Van der Weyde was out, or was too busy, etc. Finally, he "tumbled to the racket," viz., that the gentleman was determined not to show his method of working, and called no more. Probably he ought to have "caught on" to this idea sooner, but it was so foreign to our ways this side of the water that it did not occur to him. While speaking, he might mention that on this same visit he was struck by the inferiority of English to American portrait work, as illustrated in the shop-windows and gallery show-cases. Whether or no this was due to the miserable light they had to put up with for a greater part of the year in London or not, he did not know, but thought it probable. He expected the electric light to come into much more general use for portraiture, and would not be astonished to see notices posted up, "gallery open all night."

The CHAIRMAN then announced a motion to adjourn, after which they might examine the microscopes and slides on the side table. There were two or three slides of emulsions undeveloped and developed, and a curious thing was observable with reference to one of these: in order to flatten down the drop of emulsion under the cap glass, he warmed it slightly, and examining with the microscope found the particles of silver bromide dancing and wriggling about like animalcules in a drop of water; after awhile the motion ceased again. Another one not heated showed no motion at all. Perhaps Prof. Bastin could explain this phenomenon.

Prof. BASTIN. It is probably an example of what is called the "Brownian movement," so called after a gentleman of the somewhat uncommon name of Brown who was the first to discover it, or at least first to publish the discovery. If you take some magnesium and grind it very fine in water, on putting a drop under the microscope you will observe particles of magnesium dancing about. Very fine solid or liquid particles suspended in another liquid usually exhibit this movement. Heat probably renders the liquid more fluid, so that the suspended particles have more freedom of motion; at any rate, in the case of solid

particles suspended in gelatine, which would account for Dr. Garrison finding the movement in the drops of emulsion that he warmed, and not in the other. The molecules of all substances are supposed to be in constant motion, and it is likely that they may be able to impart their own motion to a small mass like these suspended particles of bromide, while they could not do so to a larger mass.

Dr. GARRISON observed that there were also two slides exhibited under the microscope, both wet plates, one undeveloped and the other developed. A comparative examination of these and the gelatine films similarly exhibited would show them at once why he could not do as fine work as with wet collodion and other processes. There was also on exhibition the spectroscope and a number of samples of colored glass, which would enable them to see the actinic value of each sample.

Subject for next meeting, *Electric Light Photography*, which will be led off by Mr. Sherman.

On motion, adjourned.

F. H. DAVIES, *Sec'y.*

Report of the Photographic Section of the Amer. Institute.

NEW YORK, March 4, 1884.

PRES. NEWTON in the chair.

The PRESIDENT. The first thing in order is communications, of which the Secretary read several, one being from Mr. Chas. Ferris, of Malone, N. Y., relative to carbon transparencies.

Mr. GARDNER. I received from Mr. Gutekunst, of Philadelphia, some pictures made by steam and hand power. They possess all the beauty of the finest photographs.

Mr. FULLJAM. *Mr. President and Gentlemen:* The specimens are certainly beautiful, but when represented as a new process I beg leave to differ. I saw the same thing five or six years ago.

Mr. ROCKWOOD. It is due to Mr. Gutekunst that a vote of thanks be passed.

The PRESIDENT. I have the pleasure of introducing Mr. George G. Rockwood, who will address us on the subject of—

Photography and its Uses in Art.

Mr. ROCKWOOD called the attention of the meeting to a letter which he had received from Cleveland, concerning the "new and wonderful" invention in photography, a report of which had recently been sent throughout the country by telegraph, and which it was alleged would revolutionize the art.

The alleged invention, according to Mr. Rockwood's correspondent, was a method of copying pictures by the electric light! but was not quite perfected yet in the way of portraiture. In short it was an attempt to do that which had been done for years by Van der Weyde, of London, Liebert, of Paris and my friend Mr. Kurtz of this city, for portraiture, and for nearly two years in my own establishment for copying.

Mr. ROCKWOOD then exhibited and explained an invention of his own for decorating china or stone ware. What is known as printed ware, formerly in common use and of late being introduced again, is decorated by a process of "off-sets," so to speak, from impressions made from engraved copper plates. The design for a dinner set is first drawn by an artist and then engraved in intaglio on large copper plates costing from six to a hundred guineas, depending of course upon the elaborateness of the design. When these copper plates are engraved they are filled with a mineral pigment ink, of any color desired for the design. Soft paper made for the purpose is pressed upon the plate and the ink printed on the paper practically in the same manner as in ordinary copper-plate printing. These sheets are trimmed and cut into the desired forms, and then applied to the ware while in the "Bisque" or unglazed condition. The paper is then removed, leaving the picture or design upon the dish, after which the "glaze" is applied.

It occurred to me that by reversing the action of our photo-engraving or etching process these expensive plates could be pro-

duced by our art. So, securing a "line" subject I first made a negative and from it a positive on glass. I then coated a smooth sheet of zinc with bichromated albumen and exposed the plate under the positive. It is of course apparent that when inked up, and the parts unaffected by the light washed off by the acidulated water, the lines of the image will be bare instead of being covered as when printed with a negative. When etched the lines only are attacked and we have an image in intaglio, or below the surface, instead of being in relief. This plate, upon being filled with the pigmented ink, served the purpose in every way as with the engraved plates. As zinc would not retain heat, a necessary condition in a stage of the printing, I tried the same experiment with a copper plate and secured at a trifling expense very delicate designs which would have cost a large sum to engrave. The tea plate which I exhibit here to-night was made from a zinc etching. Any gentleman desirous of experimenting in this line will be given all the information needed, as I have no idea of patenting the process.

(Mr. ROCKWOOD exhibited a tea plate with a humorous design, and also the zinc plate from which the picture was printed.) Mr. Rockwood announced that with Mr. Dellac, his associate under the skylight, he had made a series of experiments in dark room illumination with a view to confirm, if possible, the experiments which have been made by a number of gentlemen in England, and which have been reported in the English journals concerning the uses of various colored glasses, to wit:

Red, green, orange and yellow separately, together, and with ground glass. His experiments were made with a series of plates of extraordinary sensitiveness registering 25 on the Warnerke sensitometer, the most sensitive he had ever seen free from fog. With a Vogel photometer placed two feet from the lantern he exposed strips of the same plate to the light of a kerosene lamp for two minutes with the following results:

Ruby with ground glass, no image.

Ruby alone, a faint image of No. 1.

Orange, green and ground glass, little stronger image of No. 1.

Orange and green without ground glass, No. 2.

Orange alone, No. 4.

Orange and ground, No. 3.

Green alone, No. 5.

Green and ground, No. 4.

My conclusion, therefore, was that a lantern covered with orange, green and ground glass was entirely safe with very sensitive plates. The color of the light is very agreeable to the eye and gives much better illumination than the ruby. It has none of the irritating qualities which the ruby light has to some eyes. It will be noticed that the use of ground glass, while interfering but little with the illumination, added much to the safety of the light.

The PRESIDENT. After the papers have been all delivered, if we have time, we will review them, as far as we can.

I now introduce Mr. Chas. Ehrmann.

Photographic Progress.

Mr. PRESIDENT. Being now before a section of an institution whose aim and object is to promote the progress of and to cultivate the mechanic and abstract arts and applied sciences, and whose efforts in the interests of photography especially are so well known, I do not doubt that a few remarks on the progress of the art will be acceptable to you.

The state of photography in relation to either science or art has not been exactly determined on by the public generally. From some sources we are informed that we are not artists, which in my own humble opinion is true; from others again we are elevated to the realm of scientists, which is also correct, in a certain measure; that is, if we ourselves look upon our avocation in that light, and if we are docile enough to learn from the experiences of others, and to draw conclusions from established facts.

Be that as it may, it can not be denied that the progress of photography tends rather towards scientific research, and spreads rapidly and with an immense power over

the field of the mechanical and technical arts. Lichtdruck, etching, heliogravure, the various forms of pigment printing, the so-called process work, blue printing, the use of bromo-gelatine paper, and the use of artificial light have all served to turn the attention of the old-fashioned photographer in quite a different direction to that of obtaining a copy of the human face.

We have at last arrived at such a stage of development that the making of photographic portraiture is considered a branch of photography only, whereas not long ago, a photographer was *eo ipso* a likeness-maker only. Now the likeness-maker sinks into insignificance before the photographer *par excellence*.

The public is apt to call the man who photographs a human face or form an artist. Some may possibly be enabled to become such, but many also produce only caricatures. In making a portrait, bust, or whole figure, certain artistic rules of posing and lighting the subject must be observed.

The real artist poses and lights his subject according to his own skill and taste, and the sensitive plate is required to respond to his ideas and conceptions.

The architect desires his building photographed to show to the best advantage its cornices and pillars.

The scientist requires that the object or subject to be photographed be rendered in all their details on the plate.

The mechanic or tradesman who sends forth his agent, furnishes him with photographs of the wares he has for sale, and they must be true and faithful representations of the stock in store.

Who can respond to the sentiments and feeling of the artist before the camera? Who is able to render the architect's designs truthfully? Who will fix the image of a microscopically enlarged object, or a medical subject correctly? and who may render photographically upon paper the intricacies of maple wood and mahogany, polished and matt silver, or those of an old and faded manuscript.

Answer. A skilled, technical photographer.

The men of *technique* in our photographic laboratories are very much underrated; in many portrait studios the dark room operator is relegated to a back seat and tolerated as a necessary evil only, especially so now, since the advent of ready-prepared sensitive films. All experience and knowledge of chemical agencies and action have at length become superfluous in the dark room!

How erroneous such ideas are when we behold the results proceeding from highly accomplished artists. The effects we see upon the plate often differ widely from our expectations.

The reason why better results are not always obtained under otherwise more favorable circumstances must be looked for in the dark room. In my own opinion the technist is equally important in making a good portrait as the artist or the sensitive film.

The most important point in making a good photograph is the proper time of exposure. And how ridiculous when some operators say they allow themselves a latitude of from 1:5. What can be expected with five seconds' exposures when for the same plate one second or a fraction of one is sufficient? No restrainer can or will then make a faultless picture. It will be wanting in some point or other. Fortunately the demands upon a good photograph are not all equal, and that which suits Tom to perfection, may be thought by Dick to be below mediocrity.

From that it must be learned that treating a gelatine emulsion film successfully is not a mechanical matter only, but one requiring knowledge, skill and good judgment. A very limited judgment we see frequently displayed in the compounding of developers, as, for instance, over-loading it with all possible and impossible acids—the imagined virtues of some chemical being added—or the addition of ammonia to potassa or soda. The ferrous-oxalate developer has been mutilated just as much as the pyro.; and of hydrokinone we have heard of about as many formulæ as of different results. The treatment of a plate after

developing, and the many irregularities at times coming to view, must also confirm the importance of the technical operator; likewise the collodion operator who, besides the attention he bestows upon the plate after exposure, prepares his sensitive film on the spot, and excites and controls the action of his silver bath. No very small task!

The use of proper objectives, the application of diaphragms, the handling of the drop shutter, all simple as they may appear, require not only technical skill but a decided knowledge of the laws of optics.

Let us give a glance at the immense field upon which photography is employed. Lichtdruck, heliogravure, the etching, washed and swelled gelatine processes; photolithography and zincography, the printing and enamelling of ceramics, printing on wood, and fabrics; and for astronomical, meteorological and spectroscopic observations the naturalist, physician and microscopist equally find photography to be an auxiliary to their scientific pursuits. Even by the courts of justice photography has been employed.

For pigment printing collodion films have generally retained their importance. But how widely different appears the collodion here from that of an ordinary portrait or landscape negative. All the methods of intensifying and transferring, the application of diapositives, the breaking up of a camera picture by line, lattice or stipple work, to render it fit for printing with the press; copying on gelatine; casting in wax, gypsum, type metal, or by the electrotype; even the galvano plastic process has served for photographic reproductions.

Photography has indeed made rapid progress, and with astonishment we must look upon all that has been accomplished since the times of Daguerre and Niepce. This advancement is due in a great measure to the scientist proper, but in a still greater measure to the efforts of the amateurs. They have given to the professions a great impulse, and fortunately their efforts have been properly responded to. In uniting all the branches of sciences necessary to success

in our avocation, we shall find photography to assume its proper place.

I have often lamented the fact that in this proverbial land of progress there is so little aid rendered to the beginner or apprentice in photography; here there is no institution in existence wherein the pursuit of this knowledge may be engaged in. Many years ago an effort was made to connect a school of photography with *Columbia College*, and Chicago, frequently ahead of this great metropolis, made an effort in this direction; but what became of it I do not know. With the promised aid of two other members of a photographic society here I had an idea of establishing a school for the instruction of young men and apprentices in the rudiments of chemistry, general physics, optics, and theory and practice of the art; but with all our enthusiasm, we found no encouragement. Too premature; no funds; no instructors; no pupils were the answers we received. The three latter objections may be admitted; the first one not by any means; for it is never too late to *learn*; how little knowledge and comprehension of theories exists, and what a lack of understanding of the simplest words used in photography, and the almost total ignorance of chemical equivalents and formulæ, or the laws of optics, obtains among the majority of our young men is fully known only by going among them, and you will then be struck by the *hic haeret aqua* before you.

I do not speak disparagingly of these by any means, for among them I have many warm friends; but what I say is intended for their good. They are mostly all good practitioners, good operators and printers, do good work and earn good wages. But I have often felt sorry to see them so far behind in theoretical knowledge; and have always a desire to see them in this latter respect also superior, or at least equal, to the young men coming here from Germany and France, just as they are superior to them in practice. The desire to learn is manifest everywhere among young and old, and is proved by the extensive literature and the books of instruction we receive daily. Why

not lead that desire into a proper channel?

Germany can boast of an excellent school, the Photographic Section of the Royal Polytechnicum at Berlin, where photographic chemistry, optics, general chemistry and physics, æsthetics, drawing, etc., are the subjects of instruction under Dr. Vogel. In Salzburg, Austria, Prof. A. Czurda, a section of the State Polytechnical School instructs in lichtdruck, photo-gravure, photo-lithography and zincography, general photography, portraiture, retouching, galvanoplastic, photo-ceramics, chemistry and all other auxiliary sciences; while in Vienna Dr. Eder and Dr. Hornig, professors of the Imperial Polytechnic, instruct in photo. chemistry, theory and practice.

In Paris, we learn, examinations of young photographers have taken place under the auspices of *la Chambre Syndicale de la Photographie*, by Messrs. Davanne, Vidal and Bardy.

In Berlin, Vienna, Zurich and Paris there are societies whose object it is to care principally for the education of apprentices, to instruct them in general knowledge, and photography especially.

The only source of theoretical instruction at our command is the American journals, some of which it must be said have lately made extraordinary and successful efforts.*

But that is not enough. More regular instruction should be given. An institution based upon a scholastic basis should be created, and in the first course of instruction the elementary parts of auxiliary sciences should be taken up, while in succeeding classes the higher branches could be taught, experiments made and practical demonstrations given.

In establishing such a school I see no difficulty. Volunteer instructors can easily be found among our generous and experienced *collaborateurs*. A lecture room might be obtained free of cost, necessary expenses covered by subscriptions; and if a body of intelligent men like I see before me, which has already cheerfully done much for the

advancement of photography, would take the matter in hand, the enterprise could not possibly fail.

You will agree with me that the ideas laid before you deserve consideration at least. Theory and practice are indispensable and inseparable. Practice without theory is like a barren tree and—

"By knowledge do we learn ourselves to know
And what to man and what to God we owe."

The PRESIDENT. I now take great pleasure, gentlemen, in introducing to you one of the pioneers of photography, Mr. Charles Wager Hull.

Mr. HULL. I think, Mr. Chairman, there is one little matter that might as well go upon the record here, and that is the age of our society—when we started—the time and place. For this simple reason, the Philadelphia Photographic Society have been making arrangements to celebrate their 25th anniversary. It was only born 25 years ago. It is too young for us.

As to this society. A party of gentlemen met on the 22d day of Feb., 1859, at the rooms of the American Institute, No. 351 Broadway. The society, or the gentlemen composing it, met for the purpose of organizing an association of photographers.

They met again on the 26th day of Feb., 1859, to appoint a committee to draft by-laws and organize a society, which met on the 26th day of March, in this room. At that meeting I was present. I had the honor of being elected secretary of the Association in February, 1860. I think, Mr. Mason, with an interval of one or two years, followed me. This little statement I make so that our friends can know when we were born.

Dr. EHLMANN said: A club was formed and existed in Philadelphia, Pa., in the winter of 1853-54. Informal (no other) meetings were held at the residence of Const. Guilloû, on the corner of Walnut Street near Washington Square. The organizers and members were, as near as he could remember, Judge Dobbin and J. Cole, of Baltimore; Thos. H. Clark, of Philadelphia; Mr. Snelling, of the *Journal of Pho-*

* The BULLETIN especially.—ED.

tography and the Fine Arts, of New York; and Messrs. Const. Guilloû, Jos. W. Bates, Jas. E. McClees, Wash. L. Germon, Ed. Tilghman, Wm. Bell, Fr. Langenheim, and Chas. Ehrmann.

Mr. A. S. HOLMES was then introduced, and discussed his system of political economy, etc., when his remarks were declared irrelevant.

Mr. MASON. Mr Holmes could give us a few photographic matters that would interest us. He was the first man who made cheap pictures in New York and made them for the million.

Mr. HOLMES. I begun at Reade Street and Broadway, C. C. Harrison being my partner, in 1848, and have been in the business ever since.

The PRESIDENT then introduced Mr. Beach.

Mr. F. C. BEACH. *Mr. President, and Gentlemen:* I intend to take up the brief time allotted to me in showing you an improved and simple form of a combined dry plate-holder and changing box, sent to me from London, and patented by Thos. Samuels. The box has been described in some of the British journals, but the models I have here will explain its working more clearly. Mr. Beach proceeded to explain the details of its construction.

After the usual vote of thanks the meeting adjourned.*

O. G. MASON, *Sec'y.*

The Society of the Amateur Photographers of New York

PERSUANT to an invitation issued on the 17th of March, and signed by Mr. F. C. Beach of the *Scientific American*, a meeting was held at the Cooper Union, Room 24, on Friday evening, March 28, at 8 o'clock. The object of the meeting, as explained in the circular, was "the organization of a new *independent* Amateur Photographic Society, for the purpose of provid-

ing for its members meetings of practical interest, illustrated by useful and interesting experiments, in order that information may be gained by seeing as well as hearing."

Printed copies of a "proposed constitution and by-laws," with blanks for marginal notes and revisions, were freely distributed to each member on entering the hall.

The meeting was opened informally by Mr. F. C. Beach, who after stating its object was called to the chair, Mr. M. E. Partridge, being appointed Secretary.

After a protracted discussion as to the name of the Association, and who should be eligible to membership, a constitution was proposed and adopted. Only amateur photographers will be permitted active membership. Honorary members may be elected, and professional photographers as subscribers may be entitled to all the privileges of the society, excepting the right to vote and to hold office. The annual dues are to be \$5 00 for members and \$3 00 for professionals. Among professional photographers present were Dr. Ehrmann, T. C. Roche, David Cooper, and Robert Atwood, and among the amateurs were H. J. Newton, President of the Photographic Section of the American Institute, Chas. Wager Hull, A. D. Fiske and others.

Our Illustration.

WE again have the pleasure of gratifying our subscribers with a couple of nice illustrations made with the Schmid Detective Camera. Like those in our January issue these were made on Eastman's special dry plates by a gentleman who takes great pleasure in photography unprofessionally, and has been singularly successful in all his efforts with both the wet and dry processes.

The posing of both groups is admirable, and it is very evident that they were taken at their best.

That little streak seen on the shadow of the swan's neck, and other smaller spots, is due to floating particles on the surface of the water.

* An interesting paper read by our old friend, Mr. E. T. Whitney, and several other important papers are unavoidably omitted.—J.D.

Dry Plate Talk in Philadelphia.

IN response to the following invitation—

DEAR SIR: A notable collection of direct life size camera portraits, and other work of smaller size but equally fine character as photographs, will be on exhibition at the Franklin Institute, 15 S. Seventh St., Philadelphia, Tuesday evening, Feb'y 19, 1884. You are respectfully requested to be present with your friends.

THE EASTMAN DRY PLATE CO.

A large number of gentlemen, representing the photographic energy and talent, both amateur and professional of Philadelphia, met at the place designated and enjoyed a very lively, instructive and interesting experience meeting.

Mr. Cooper introduced the object of the meeting, and in a few remarks welcomed the visitors on behalf of the Eastman Dry Plate Co., and called their attention to the excellent samples of work on the Eastman Special plate, by Mr. J. H. Kent, of Rochester, which elicited warm testimonials of admiration. The topic of development—old, but ever new—was of course reached in short order, and many were the questions asked and answered, and much valuable information given and received.

There being in the invitation nothing of formality about the meeting, a general interchange of ideas and experiences was the order of the evening.

In speaking of the marvellous sensitiveness of the Eastman Special plate, Mr. Bell inquired whether great sensitiveness was not a detriment to the use of the dry plate.

Mr. Cooper replied: Great sensitiveness in a dry plate is no more a detriment than extreme swiftness would be in a trotter, all that was necessary in both cases being greater skill in management; and as a standard of excellence is only reached by a high aim, why not shoot at the top target. In conclusion he stated emphatically that it was *begging* the question, and a decided insult to the intelligence and skill of photographers, for any dry plate manufacturer or agent to state that they did not make an

extremely rapid plate, as it was risky for photographers to use them. Development having been so thoroughly reduced to a science, every man of perception and aptness in his calling could not now fairly claim that any plate could be unmanageable because of its rapidity. In other words, the grapes are sour. And want of sensitiveness is extolled as one of the many ways of making a virtue of *necessity*.

Mr. Wardlaw's method of development was read and explained by Mr. C., and the samples of Mr. Kent's work brought forward as proof of the excellence of this form of manipulation.

By request Mr. C. gave an explanation of his own method of working, in which he uses no bromide as a restrainer, as follows:

The action of bromide on shadows as compared with high lights is almost if not quite in the proportion of 5 to 1. Consequently to get any detail in a shadow by means of a developer containing bromide, particularly in the large quantity which is prescribed in most developers, said shadow must be lighted to the character of a half-tone, or a prolonged exposure must be given, to counteract the influences of bromide and so obtain a shadow with brilliance and detail. This entails the rather ridiculous action of spurring and reining simultaneously, an accelerator and restrainer being used at the same time—a full head of steam on an express train with all brakes down; a novel method of locomotion, surely.

Now, to avoid all this, I light my sitter with strength and contrast, preferring to make my shadows under the skylight rather than in the dark room with bromide; and working without a restrainer enables me to make extremely rapid exposures. Now I do not wish to convey the impression that I do not advocate the use of bromide. I do most decidedly; but only in its place, I always time for my normal developer, and if my timing has been at fault and I need restraining, my restraining developer is always handy either in a dish or separate graduate, and can be used at pleasure; that is to say, in railroad phraseology, I

put down the brakes when I want to, but never otherwise.

The question was asked. What is the action of bromide in development? In reply: The action of light on a bromo-gelatin film liberates the bromine and leaves the silver in a metallic state in the film, varying in deposit with the action of light from high lights to shadows, there being considerable in the highest lights, less in the half tones, and very little in the shadows. The action of bromide is to reconvert this finely divided metallic deposit into bromide of silver; and of course its action is strongest where the power of the light was weakest, and so upward. Bromide of silver so reconverted is not acted upon by any developer; and where an alkaline or other developer is used in combination with bromide, it becomes necessary to so far increase the time that the action of light is greater, and so counteract the influence of the bromide.

How all this can be avoided by not using bromide, unless necessary, I have already described, and can be readily seen.

After a closer inspection of the pictures, which were strongly illuminated with the oxy-hydrogen light and presented a magnificent effect, the meeting was brought to a close, and many photographers left with the determination to embark in the production of large work. Good luck to them. Example is better than precept.

The following evening being the regular meeting of the Franklin Institute, Mr. Cooper presented the exhibit of the previous meeting to the members, the house being full; and in a few remarks contrasted the early days of the art with its present possibilities. Much interest was exhibited in the display, and probably not a few went away with the determination to be pictured large as life. A proper tribute was paid to the artist, Mr. J. H. Kent, and also to the manufacturers of the plates, The Eastman Dry Plate Co., of Rochester, N. Y.

WE have just received a large number of crates of porcelain dishes, and are ready to supply them in any quantities.

Messrs. Smith & Pattison.

THE new photographic stock house, recently opened by Messrs. Smith & Pattison at 83 and 85 Wabash Ave., in Chicago, has been fitted up in a manner specially adapted for the display and sale of accessories, frames, mats and all requisites of the photo. material trade.

The members of the new firm consist of Mr. Jas. H. Smith, formerly at Quincy, Ill., who for the past twelve years has done an extensive and successful business there, and Mr. Thos. W. Pattison, who has been connected with several well known houses of Chicago for the past fifteen years, and for seven associated with Mr. Hiram J. Thompson as manager of his photographic department.

The books will be under the supervision of Mr. Carl F. Von Brunck, an experienced accountant formerly with H. J. Thompson.

Mr. Theo. H. Johnson, who has had twelve years' experience, will have charge of the stock, assisted by Mr. H. C. Cheek, a gentleman of unusual popularity and experience. The packing and shipping department will be under the direction of Mr. Albert Wolf, and Mr. Edwin Davis, a talented young artist, will conduct the scenic studio with skill and proficiency.

Mr. E. L. Papineau, the artistic manufacturer of *papier mache* accessories, whose workmanship was the cynosure of observation at the last Convention at Milwaukee, will also supply the trade with many new and handsome designs.

Mr. C. H. Hanchett will have charge of three new presses, specially procured for cards, etc., and with an unlimited quantity of new designs and type, their printing will be excelled by none.

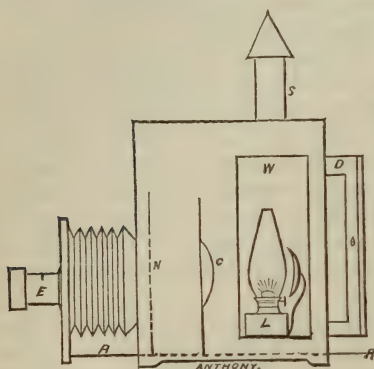
Messrs. S. & P. are certainly well equipped, and have our best wishes for the success of their undertaking.

MR. LAFAYETTE W. SEAVEY, so long at 8 Lafayette Place, this city, has at length determined on a removal. See his new bulletin for the month.

Anthony's New Enlarging Camera.

PATENT APPLIED FOR.

THE great merit of this new enlarging camera is its simplicity of construction, economy, and practical usefulness. It is in-



tended for making enlargements on gelatino-bromide rapid printing paper by artificial light, requiring only from thirty to sixty seconds' exposure for a life-size head. Another purpose for which it admirably serves is that of a dark room lantern. Some of them are provided with non actinic glass panels in the sides of the camera. It can also be used as a copying camera for making lantern transparencies.

Grooves in the interior admit of changing the relative positions of the negative and condensing lens. The instruction is so exceedingly simple that a glance will be sufficient to enable any one to understand it.

C is the condensing lens.

N, Negative holder.

L, Lamp with reflector.

W, Window of non-actinic glass.

D, Door. S, Smoke chimney.

E, Portrait or enlarging lens.

R, Rod, by moving which the focus is obtained. It is very compact, the size being, 18 x 15 x 8 inches. Price \$20 00; including one quarter-size E. A. portrait lens, \$28 75.

GUENTHER WAGNER'S Hanover retouchers are going satisfactorily, and the photographers *are well pleased* with them.

The Roche Testimonial.

A VERY enjoyable gathering of the photographic fraternity was assembled last evening (Mar. 18,) at Martinelli's famous restaurant on Fifth Avenue, for the purpose of presenting that old veteran of the art, Mr. Thos. C. Roche, with a slight token of their respect and esteem.

At eight o'clock quite a goodly company (upwards of sixty,) sat down to an enjoyable French dinner under the chairmanship of Col. V. M. Wilcox. Mr. Bogardus made the presentation speech, and handed Mr. Roche a handsome gold watch and chain. His remarks were very felicitous, and were followed by some lively and interesting toasts and speeches.

Nearly all the leading photographers of New York were present, and also many amateurs.

In our next issue we shall publish a full account, including a report of the speeches and responses to toasts, and also a finely engraved portrait kindly furnished by Mr. J. C. Moss of the Moss Engraving Co., this city.

A New Firm.

MESSRS. BUCHANAN, SMEDLEY & BROMLEY have just established themselves at No. 25 N. Seventh St., Philadelphia, all young, energetic men, formerly with Mr. T. H. McCOLLIN, and all thoroughly well known to the trade. We are happy to say they have displayed good judgment in selecting a full line of our novel cameras, amateur equipments, and other photographic requisites. See advertisement.

A Severe Loss.

THE old established and respected house of Powers & Weightman have recently sustained severe loss in the entire destruction of their extensive chemical works by fire on the morning of the 29th of February. The property destroyed in stock, machinery and plant is estimated at a million or a million and a half, in which there was insurance for \$300,000 only.

Amusing.

ONE of the most amusing things we have seen for some time is the new brand of albumen paper some enterprising Hollander has put on the market. It is an excellent representation of a *Shanghai hen* surrounded by the words "Sup-brilliant Am. Eagle Trade-Mark." The noble bird seems very proud of his name, and we have no doubt the paper will be popular for the reason that every one who uses it will laugh at each sight of the trade-mark. As he laughs and grows fat, he will bless the "American Eagle." Those who have tried the paper speak very highly of it. We presume every dealer can furnish it. The price, we understand, is 90 cents a dozen.

Another Novelty.

MORENO, the art photographer on Fourteenth Street, this city, has introduced a novelty which has completely captivated a majority of those who have seen it. A lovely photograph lies before us of Jennie Prince as Diana. The pose is an artistic one and the effect highly pleasing. Diana, beautiful Diana, is seen coming in the clouds, and very prettily she looks indeed.

We understand that Mr. Moreno intends placing this novelty in the market. Mr. Seavey will make the grounds. The effect is secured by means of a transparent foreground (the cloud effects being drawn upon glass), and the ordinary canvas background, the subject being placed between the two.

Arrivals for the Month.

AMONG the distinguished gentlemen who have visited us during the past month on business were Messrs. Matthew Horgan and W. H. Robey, now of the firm of C. H. Codman & Co., of whom they constitute the active partners.

Also Mr. J. F. Ryder, of Cleveland, Mr. Edward Cope, of Philadelphia, Mr. Chas. Hill, of the Phenix Plate Co., Mr. Van Loo, of Cincinnati, and Mr. C. D. Mosher, of Chicago.

Bogus Gilt Edges.

MESSRS. A. M. COLLINS, SON & CO. have issued a circular announcing the fact, that certain parties are engaged in the unworthy endeavor of palming upon the trade a line of bogus gilt beveled edge cards, which are only a colorable imitation of the genuine, and into the composition of which not a particle of pure gold is said to enter. They are also very roughly beveled. Keep an eye out for them.

MR. ROBERT DEMPSTER has purchased the photographic stock and frame house of Mr. J. H. Smith, of Quincy, Ill.

By reference to our columns of special notices it will be seen that Mr. W. F. Ashe, of background fame, has removed to 68 W. Fourth Street, where he has the largest establishment of the kind in the world, he says.

Pictures Received.

ONE of the jolliest pictures that have come to hand for a long time is a cabinet group of seven dogs of different species. The canines are evidently endeavoring to make a good impression, and as anxious as any young ladies could be over the *dé-nouement*. They are nicely posed, and artistically grouped; first a black dog and then a white one, then another black dog and another white one, then another black dog and another white one, and then another black dog. We have never seen so many evidently good dogs in a photograph before, not even in a "doggerlytype," and all very sharp, especially about their mouths.

Mr. F. L. Howe, of this city, has shown us some very excellent work, interiors and outdoor, of the residence of Mrs. R. A. Packer, at Sayre, Pa. The plates used were Eastman's special, and the instrument a Dallmeyer wide angle rectilinear No. 2 for 10 x 12 plates. The upholstery and interior decorations are superb and superbly illuminated, every detail being rendered and rendered admirably. His address is 31 Union Square.

A Card.

MR. EDITOR. Referring to a letter read by Mr. Mason at the last meeting of the Photographic Section of the American Institute, in regard to carbon transparencies from Mr. Chas. Ferris, of Malone, N. Y., I would state that by using proper precautions and following the printed instructions I never yet lost a single picture. I attribute his failure to the uses of dirty glass or rotten collodion—that is, very acid collodion.

T. C. ROCHE.

THE twenty-fifth annual report of the Trustees of the Astor Library is received, announcing the addition of 7,610 volumes, exclusive of pamphlets, making a total of 208,429. The library has been enriched by several important gifts, among them a collection of books relating to Japanese history and geography, donated by the Japanese Government itself.

MR. F. E. DAVIS, formerly with C. H. Codman & Co. of Boston, is now engaged with Mr. W. B. Holmes, of this city. Mr. Davis was present in the company of Mr. Codman at the time of the accident by which Mr. C. so unexpectedly lost his life, and was himself incapacitated for business for several weeks.

Detroit Items.

D. H. HAMILTON has sold out to Miss Philbrick and Mr. Arthur, formerly with J. E. Watson.

J. E. Watson, who has long been one of the leading photographers of Detroit, has sold out to F. W. Tomlinson.

We understand that D. J. Smith, one of the "old timers," has an idea of returning to his first love and opening up a first class studio in the city of the straits.

THE amateurs of Lowell, Mass. are about to organized a permanent club. A committee has been appointed consisting of Messrs.

F. W. Way, P. Butler, R. F. Hemenway and F. H. Pullen. No doubt we shall soon hear something further from this quarter and many others, now that the fine weather is approaching.

CORRESPONDENCE.

PORTLAND, ME., Feb. 6, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Dear Sirs: Please be so kind as to send to my studio two copies of the BULLETIN instead of one as now.

There are many articles part of which is on one side of a sheet and part on another of the same leaf. I want to save such, so that I can cut out of both, and paste in a scrap book for ready references under proper heading. One can save by this plan just what appears to be needed, to read over at a future time; for then it is hard to find it, too, especially when the BULLETIN is likely to be read by a dozen or so, and it is a conundrum whether you ever see it again; so this year, I intend to try the plan of pasting in a large volume of straw-board for reference all such articles that I think I may lose sight of. I think your BULLETIN to be very fine.

Respectfully yours,

C. W. HEARN.

CEDER RAPIDS, IOWA, Jan. 21, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

I have taken the BULLETIN ever since its first appearance on earth, and shall continue to take it until I pass over to the other side; so when you get notice to stop the BULLETIN you may know that I am photographing on the other side of the river.

Very respectfully,

S. T. WIGGINS.

N. ADAMS, MASS., Feb. 8, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gents: Enclosed please find P. O. Note for amount due on BULLETIN. A journal of such merit is as popular with the photographic fraternity as its namesake of the stock exchange.

Yours,

H. D. WARD.



*Yours Respectfully,
T. C. Roche.*

ANTHONY'S PHOTOGRAPHIC BULLETIN

FOR APRIL, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

Page, for a single issue,	\$15
Half page, " "	8
Quarter page, " "	5
Eighth page, " "	3
Special Notices, per line,	25 Cents.

Anthony's
Photographic Bulletin,
ILLUSTRATED.

Terms for 1884: Two Dollars.

Unillustrated, One Dollar.

Payable in Advance,

And only to those who pay.

The Roche Testimonial and Dinner.

SEVERAL months ago Mr. H. N. Grenier, of this city, impressed with the importance of the work accomplished and good service rendered the photographic fraternity generally by Mr. Thos. C. Roche, determined on reciprocating a little act of kindness by making an appeal to his fellow craftsmen in behalf of so worthy a friend and companion. His idea, when once broached, was seconded with great unanimity, and a strong desire was manifested to become participants in some appropriate and substantial tribute to the man they honored.

At first it was simply intended to have a quiet but comfortable repast in a cosy and safe retreat, where the glitter of wealth and the gayety of fashion seldom approach.

But the subscriptions were so ample and the feeling so enthusiastic that the first project was abandoned, and in consequence a large and brilliant company of gentlemen assembled in a well known and elegant resort on the Fifth Avenue, in accordance with the following invitation:

TESTIMONIAL
TO
MR. T. C. ROCHE.

New York, March 4, 1884.

Dear Sir:

*The Testimonial to
Mr. T. C. Roche will be pre-*

*sented on Tuesday Evening,
March 18, at Martinelli's,
No. 110 Fifth Avenue.*

*Subscriptions, if not already
contributed, must be paid on
presentation of this card.*

Dinner will be served at 7.

BY ORDER OF THE
COMMITTEE.

{ H. N. Grenier.
{ T. A. McGeorge.

The Roche Testimonial.



Come at seven



O'clock Sharp.

MARTINELLI'S, 110 FIFTH AVENUE.

Admit to one Exposure of each Plate.

Punctually at the hour named the guests arrived, were introduced, and interchanged friendly chat in a private parlor of one of the old brown-stone mansions that formerly did service as the palatial abode of a New York merchant prince, but is now occupied by the famous *restaurateur* Martinelli.

Through some inexplicable oversight the gentleman who had been invited to preside

did not receive the printed notice (although the day on which the testimonial was to have been presented was made known to him), and the date escaped him; the committee were therefore under the necessity of calling upon Col. V. M. Wilcox, who kindly consented, to take the chair.

Being announced by the committee, the chairman escorted the company, headed by Mr. Bogardus, Mr. Fredricks, Mr. Rock-

wood and more than fifty other well known gentlemen connected with the art to the banquetting hall, where at a continuous table the guests sat elbow to elbow in a double phalanx from end to end, Col. V. M. Wilcox and Mr. Chas. D. Fredricks facing at the two extremes. Never before in this city were seated together so many honored and shining members of the craft, to render homage to one of its humblest though worthiest of representatives.

The *menu* was an unpretentious though substantial one; ample justice was done to the modest courses, and gaily and enjoyably the hours sped on till the fragrant fumes of coffee and tobacco served as a gentle reminder, and the chairman summoned attention and addressed the assembly in the following words:

GENTLEMEN: I am very sorry that our friend, Mr. H. J. Newton, is not here to preside at this table, and no one regrets it more than I do. I feel somewhat afraid that I shall not meet your expectations; but, gentlemen, I trust that there are here no arms to be encountered save those of friendship, and no shots to be avoided save those flashing from bright eyes, and that there are none here save kindred spirits exchanging congratulations and rejoicings the present opportunity affords us.

Gentlemen, we meet here to-night to honor a man who is known to you all—known for many long years; and it gives me great pleasure to feel that he is so honored; that so many noble and true men of art have come here to do honor to him; a man who has spent the greater part of his time, and the best part of his life in following a profession which you are all interested in—one that has been his love, and one which he probably will follow so long as he lives.

We have a little secret at this end of the table. There is a little box here, and our friend Mr. Bogardus will say something about it; but I don't wish to take up your time now in telling you what it is.

There are many here to-night who will be glad to say some words of encouragement to the man we honor, and I wish to

say one for him myself. I have known him for about twenty years. I know him to be a man of sound integrity and sterling value, and well worthy all the honor which you may bestow upon him. (Applause).

Gentlemen: I have a couple of letters from absent ones. Mr. H. T. Anthony has been quite ill for some weeks past, and his physician has sent him down to the Hot Springs in Arkansas. I wrote him what was proposed to be done in honor of our brother Roche, and he responds as follows:

HOT SPRINGS, ARK., March 15, 1884.

DEAR COLONEL:

I have just received your favor of the 12th instant, enclosing a ticket for the dinner and presentation to Mr. Roche.

I am very sorry that I shall not be able to be present, to contribute my testimony to the worth and ability of Mr. Roche, but as far as I can do so by means of this missive I desire to render a sincere tribute to his excellence of character as a man and to his ability in the profession of his love. We have long been climbing the hill of photographic knowledge together, and my hope for him is that, though I may falter in the ascent, it may be reserved for him to reach the pinnacle at which I may never arrive.

Please remember me to all the gentlemen present; and believing that no chair on such an occasion should be vacant, I return the ticket, to be disposed of as you think best.

Please give Mr. Roche my hearty congratulations for this evidence of the esteem in which he is held by his acquaintances, including his old friend, myself.

Yours, very truly,

H. T. ANTHONY.

(Applause).

The CHAIRMAN. The other letter is from Mr. E. Anthony.

MARCH 18, 1884.

DEAR SIR:

I regret exceedingly that circumstances prevent my being present on the occasion of the presentation to Mr. Roche of the

testimonial of esteem on the part of so many of his friends.

My presence would not add much weight to the meeting (probably about 125 pounds), but *any* extra gravity might detract from "the hilarity of the occasion."

Notwithstanding that I cannot be with you personally, I am heartily with you in the matter of doing honor to Mr. Roche, for his many qualities of heart and mind, as well as for his discoveries and improvements in the photographic field.

If anybody ever had photography on the brain it is Mr. Roche, and though he has been mixing brains steadily for the last twenty years with everything he has produced, he appears still to have plenty left, and I have no doubt will continue to draw on them in the improvement of the art, which he maintains is "still in its infancy."

Yours, very truly,

E. ANTHONY.

*To the Chairman of the
Roche Testimonial Meeting.* }
(Applause,)

The CHAIRMAN. The first thing I find on the programme is the name of Henry J. Newton, chairman. Well, we have passed that. The next is the presentation by Mr. A. Bogardus of this little box, and in it the testimonial. It is a fine watch, and as good as any body has. Mr. Bogardus will tell you about it.

The Presentation.

Mr. BOGARDUS was greeted with applause, and in making the presentation spoke as follows:

My brother: I wish to say a few words to you. We feel it a duty as men engaged in the profession in which we are, to yield honor to a man who has done so much for us; and a few of your friends have gathered here to-night to offer you this testimonial. I say a few, because if all your friends were to come together, I don't know where you would find a room to hold them, and I don't know a caterer who would undertake to feed them. Your friends are many. You have worked with head and hand, and you

have such indomitable pluck that you never stop short of success; and we only say amongst ourselves, "what will Roche do next?" It is said of Lincoln, that when Sherman commenced his march the people at the North didn't know exactly where he was going, and some one asked Mr. Lincoln if he knew. Mr. Lincoln said: "I know where he has gone in, but it is hard to tell where he will come out." It is so with Mr. Roche. He is working at something constantly, and we don't know where he is going to come out at; but whenever he comes out he brings something with him. All we have to say is, Friend; go right along, and we will stand at your back.

It is related by naturalists that a certain little amphibious animal is all nerve from the top of its head to the end of its toes. Mr. Roche is all photography from head to toes. And at this moment I am reminded of a story.

Several professors from Yale College went out West to find petrifications. They were looking through the Yosemite and other places, and at last came across an old farmer who lived there. The gentlemen being very tired stopped at his house, and got into conversation with him. The old farmer stuttered—had an impediment in his speech. They inquired of him in regard to the country round about. At last he said "t-t t-there's a p-p-petrified man just out beyond here and he's g-g-got a g g-gun up s-s-shooting; and the g-g-un is petrified too. (Laughter and applause). And about f-f-fifty feet or over off in the a-a-air t-t-there is a b-b-bird, and it is p-p-petrified too. The professors said that could not be; that it must be a falsehood; that the attraction of gravitation would interfere, and the bird could not remain in the air without support. The man replied, b-b-but the attraction of g-g-gravitation is p p-p-petrified too. (Laughter and applause.)

So it is with our friend Roche. He seems to be the attraction of gravitation all the way down and up. You can't miss it.

There is only one thing I hope he will never do—invent a way to take colors. Now suppose we had to take colors. One

old lady would come back and say, "I have more color in my cheeks than that." Another old fellow would come in and say, "my nose is altogether too red." (Laughter.)

If suited in color of face, it would revert to color of dress. One will say, you have the colors wrong; mine is a pink, and it is a peacock blue; and you take it over again. Another says, mine is a "London smoke," and you have got it "moon on the lake," or a sunshine glimmer, etc.; and you set them again. Setting them again reminds me of a story. An old lady's husband had been drowned, and they could not find him for several weeks. At last he was found floating in the water and the body full of eels. They went to the widow and wanted to know what they should do with him, and she said, "take the eels out and set him again." (Laughter.) And those fellows down at the other end of the table know what it is to "set 'em again."

Now, Mr. Roche, in the name of all the gentlemen present I take great pleasure in presenting you this watch, and wish all the gentlemen here a good time, although I don't believe there is a dry plate man in the house to-night.

Mr. THOS. C. ROCHE having been announced by the Chairman, amid great applause made the following brief response.

Mr. Roche's Response.

MR. CHAIRMAN AND GENTLEMEN:

I consider this a great honor which you are conferring on me for my humble endeavors to promote photography, and as a workman in the profession. In accepting this magnificent testimonial of your esteem, gentlemen, I more than thank you, one and all. You time me by your friendship, and chain me by your good will.

A great deal of my success is due to the Messrs. Anthony & Co., and in particular to Mr. Henry T. Anthony, who has pointed out the lines of investigation to be pursued and objects to be gained, and by his chemical skill has enabled me to overcome every obstacle I have met with in attaining the

results desired. Their uniform kindness, courtesy and confidence has always made the discharge of my duties a source of unalloyed pleasure.

In my intercourse with professional and amateur photographers I have always found great satisfaction, and I have reason to believe the feeling has been mutual.

To the gentleman who, unknown to me, originated this evening's demonstration, Mr. Henry N. Grenier, and to those who so promptly united with him, I am under deep obligations.

There are here to-night some gentlemen who are world-renowned in the profession, and they do me honor by joining with you on this occasion. You are anxious to hear from them, and I am afraid unless I stop I may over-develop and fog badly.

I thank you all again, gentlemen, for your substantial mark of esteem and friendship.

The CHAIRMAN. There is a toast on the list to be responded to by Mr. Geo. G. Rockwood. You all know him. He does everything as "quick as a wink."

Photography of the Past and Present.

Mr. ROCKWOOD. That is a hint from the Colonel that he wants me to be brief.

Some three weeks ago, some one came to me and said, "Rock, we are going to give the old man Roche a setting up. Now I want you to speak on the toast, "Photography of the past and present." I said, "that is rather presumptive; is it not?" "Yes," says he; but, Lord, you have been a photographer always." If he had limited it and said I had once been a photographer; but he has carried me away back to the age Methusalah, and I don't think it is proper for me to respond. Mr. Bogardus is the man; he has been some ninety-nine years before the camera. (Laughter.)

Last Tuesday night I went to the meeting of the photographers at the American Institute. Brother Whitney stood up and claimed he had taken a good picture of Pontius Pilate. Charlie Hull said, "Rock; that ain't so. He is nothing but a boy in

the business. I tell you I used to take instantaneous photographs off Noah's ark." So you see I am entirely unfitted to speak on that subject in that way.

I might say a word possibly on the changes that have taken place in some particulars since I entered photography. Twenty-five to twenty-eight years ago, when I first became a photographer, I would say to inquiries as to what business I was in—"I have been a reporter, and I have been in other business." The photographer of that age was looked upon as a human cess-pool. When men were good for nothing else they became photographers. If two photographers were standing together in conversation they would each try to see who could tell the biggest lies to prevent the other from finding out any secrets of the business. All that has changed, and we have here this evening an illustration of their present good fellowship. (Applause).

If we want information, if we cannot get it in the journals—which we did not have in the earlier days of photography—we go to the next door neighbor and get a courteous reply. There is now an era of good fellowship among the fraternity. Now as short speeches are in order—as a representation of the past and present of photography there is our old friend Roche, who is twice the epitome of the past, the present and, I hope, the future also of photography. (Applause).

The CHAIRMAN. Gentlemen, Mr. Kurtz had promised to be here, but there was a family gathering in which he was obliged to be present and take part, and wishes to be excused.

We have next a toast to be responded to by an old friend, an honorable gentleman, and one we all know and are very familiar with. We don't have him with us often; but to-night we find him here, and he has promised to do something for us.

The Wet and Dry Plate Process.

Mr. C. D. FREDRICKS. *Mr. Chairman and Gentlemen:* I find on the little card placed at each dry plate the following:

Menu.

Huîtres sur coquille
Hors d'œuvre varié

POTAGE

Consommé printanière

POISSON

Croquette de saumon à la certosine
Pommes Duchesse

ENTREES

Poulet de printemps sauté aux champignons.
Risolle de Ris-de-Veau
à l'Impératrice.

Petits poids.

ROTI.

Becassines sur toast.

Mayonnaise salade.

DESSERT.

Glaces. Parfait amour.

Fruits de saison.

Pâtisserie assortée.

etc., etc.

This is all very dry; the wet has not been much. (Laughter and applause). This bottle shows (turning upside down) that the wet is played out, and it is very dry; and I suppose we all are. (Laughter and applause).

I love certain things; I love everything that is good. I did at one time love this old wet thing; but it is played out. I now love the dry. I love old Roche, because he is a good fellow; and I love you all, and though it is dry enough, that is all I have to say. (Laughter and applause).

The CHAIRMAN. Gentlemen: Here is the testimonial, and on the inner case you'll find engraved—

Presented to

Thomas C. Roche

by

Brother Photographers

as a mark of esteem and for valued services to the craft.

March 18, 1884.

I will send it down the table so that you all may see it.

The CHAIRMAN. Gentlemen: There is a Gardner here to-night, although it is not exactly the season for gardening; so we will call upon him to respond to the toast—

"The History of Photography."

Gentlemen, I take pleasure in introducing to you Mr. J. B. Gardner.

Mr. J. B. GARDNER. *Mr. Chairman and Gentlemen:* The history of photography—in five minutes!! (for this is the time given, I believe, to each of the speakers. With such a *long lease of time*, it is of course essential for me to go back to the first of our forefathers, even unto Adam.

No doubt you have all experienced the disagreeable fact that those whose images you have taken have seldom been entirely pleased with their own shadows; there was always something either in dress or expression that was not altogether satisfactory. Now if we analyze this matter carefully we shall find that they are not so much to blame as at first sight they might appear to be, from the fact that this spirit of fault-finding comes from inheritance! For it is recorded that when Adam first saw his image he was so displeased with himself that he went out and commenced ornamenting his person with fig leaves! And all his posterity, up to the present hour, have continued the practice of ornamentation to cover their defects.

You are all, no doubt, familiar with the difficulties the Egyptians passed through in their image making and image worship, and how they manifested the same disposition as Father Adam, worshipping every other image but their own!

Now there is something also of the history of photography or image making that has not been written—some little things that are of value, but of which we know nothing except through the medium of tradition. Take for example the "magic buff." We should no doubt search history in vain to find the origin of this discovery, and hence we have nothing left us but tradition to satisfy our curiosity.

The story is, concerning this "magic buff," that its first inception came from an accident. It is said that a daguerreotypist who was very fond of playing the violin and was too poor to have a home separate from his gallery, devoted his leisure time in thus amusing himself, wife and child. Well, the boy naturally had the disposition of the father, and desired to do just what the father did. Of course he was not allowed to have the instrument, so in the absence of the father he substituted a buff for the violin, and a tallow candle for the bow, and thus accompanied himself with his own resonant voice; but he had not proceeded far in his song when the mother appeared and instantly changed the tenor of his music. She had scarcely removed the bulk of the tallow from the buff when the husband came in, followed by a customer. The buff was used, the plate exposed, and the picture was found to be entirely overdone. He took the same buff again and prepared another plate, and exposed it in the camera for one-half the time only of the previous sitting. This picture also proved too light; but his patron taking no exception to it, he allowed it to pass. The wife was too much frightened to allow her husband to know the truth regarding the buff, but when the family physician came in she privately told him all the particulars regarding the matter. It is a sad day for the husband when the wife tells her doctor family secrets that she dare not reveal to the head of the household! The doctor, being no novice in the daguerrean art, discovering the advantages of a greased buff, called it for the first time "the magic buff," and sold it to each of the daguerreotypists for twenty dollars a piece, not even excluding the originator himself.

There is one other point I wish to call your attention to, and that is the reproduction of natural colors in the daguerreotype. I think it was a Mr. Hill who claims the honor of making this wonderful discovery. After due announcement he wrote a book disclosing all the secrets of his wonderful feat. I think it is one of the most pleasing compositions I have ever met with. In

fact, it reads like a novel of the highest order; and it is cheap, I may say, for it only costs ten dollars a copy, and contains 175 pages. In fact, it is a book so valuable that you may not even find a copy of it in the Astor Library; but you may meet with it in the libraries of some of our old daguerreotypists, who at the time of its publication had *color on the brain*!

I once read one of the formulas in this book, and if I mistake not, it contains every ingredient or chemical employed in photography, and some which I have not yet met with in all my study of chemistry; and it is my impression that any man who can put that compound successfully together is more of a genius than even our friend Roche, and he is about up to the average. But to be more serious, let us glance at the history of photography from a commercial point of view.

During the first five years of its existence its exchanges would not amount to ten thousand dollars a year. It is estimated that, at the present time, not less than forty tons of silver and three tons of gold are used annually for photographic purposes in the United States.

Now if we take the amount of gold and silver required for each cabinet picture and find the number of pictures that can be made with the amount of gold and silver above named, and the average price for which these cards are sold, we shall get the sum of \$27,080,000 dollars expended annually for portraits.

If we add to this the work of outdoor photographers we shall find that photography in a commercial point of view is certainly worthy of notice. The product of these outdoor workmen there is perhaps no exact means of telling. But if we take the catalogues of all the view publishers within our reach, we shall find that six hundred thousand different subjects are now on sale in the City of New York alone—scarcely a spot worthy of public note either in the Old or New World that has not already been photographed. Were we to take the albumenized paper used in photography in a single year, we should be able to cover a

city three times as large as New York with a silvered canopy. Hence it is easy to perceive that photographers make more pictures annually than artists have ever made in an age. Thus the photographer adds as much to the happiness of the lower million, as the painter does to the million *heir*.

So that now, by means of this beautiful and useful art, we may sit in our private parlors or public halls and see pass before us the noted ruins of the Old World, catch glimpses of its most imposing temples, its parks, its boulevards, the interior and exterior of its palaces, and its most noted scenery.

The day is passed when the traveller can come home and tell us of men whose heads do grow beneath their shoulders, of temples whose spires do reach the sky, of scenery that puts in shadow the imagery of Lallah Rookh. We will have no more of these imaginative travellers! They must come home truthful scientists, or philosophers, or historians, each accompanied with the works of his attendant photographer, or we shall class his writings in the same category with the "Arabian Night Entertainments."

By photography shall our children's children read the customs and habits of the present hour; they shall know of its arts and its civilization. By her magic charms shall the past rise again and become the present. By her the minds of future ages shall pass from place to place, from age to age, momentarily and at will!

Again shall all the "godlike heroes rise to view,
And all their faded garlands bloom anew."

Capt. Russell has something to say regarding—

The Man and His Work.

Mr. Roche commenced as an amateur photographer in 1858. In 1860 he first brought into use aniline dyes for photographic purposes, for tinting albumen paper and varnishes for ambrotypes, and for coloring photographic prints.

In the spring of 1862 he was induced by Mr. H. T. Anthony to adopt photography as a profession, and has remained in his employ ever since. About the same

time there was an immense demand for first-class stereoscopic work. There were already several very successful photographers in the field, and he doubted his ability to cope with them; but through the encouragement of Mr. H. T. Anthony he regained confidence and was soon recognized as an expert. He was the first to take a complete set of stereo negatives of the Central Park, for which he was then complimented in the *New York Herald* by Mr. James Gordon Bennett. He was also the first to make a series of Greenwood Cemetery.

During the war arrangements were made by the Messrs. Anthony with the government, by which Mr. Roche left for the front and was placed under the special orders of General Meigs. He then secured several hundreds of 10 x 12 negatives for government use, and at the same time thousands of stereoscopic views of war scenes, etc., for the Messrs. Anthony.

Afterwards he travelled east, south and west in search of the picturesque. During this interval he made upwards of fifteen thousand negatives, meeting with great success.

His experience and mode of working in the field he gave to the fraternity at the Photographic Convention of the N. P. A. held in Buffalo, for which he was honored with a special vote of thanks.

In 1877 he was awarded a silver medal for the best carbon transparencies, and again in 1878. In the same year he invented a new mode of photo-mechanical printing, and although seventeen patents were previously issued he obtained two. This process is now in general commercial use by the Messrs. Anthony, and Osgood & Co. of Boston, and others.

In 1879 he was the first to make and show proofs on gelatino-bromide paper, for which he also obtained a patent.

In 1880 he announced the important discovery described by Mr. J. Traill Taylor as the "missing link," for making an insoluble, non-frilling sensitive gelatine dry plate, requiring neither ice nor alum in its development in the hottest weather. These are now commercially known as the Eastman

Tropical dry plates; and he is at present engaged in perfecting other improvements that will still further advance the art.

In his relations with professionals and amateurs he has gratuitously imparted all the information that lay in his power.

He loves his profession, and although he has seen hard service in the field, he has never regretted having chosen photography as a business. He considers that much of his success is due to the encouragement and support he has always received from the Messrs. Anthony & Co., particularly Mr. H. T. Anthony, to whom he feels under great obligations. The latter gentleman, from his more extensive knowledge of photographic chemistry—having long made that a special study—has often been enabled to impart important information on the subject of chemical action and reaction; and when Mr. Roche has been tempted to give up in despair, not finding the results he sought, a timely suggestion from Mr. H. T. Anthony has solved every difficulty.

THE CHAIRMAN. *Gentlemen:* We have an amateur here, Mr. W. E. Partridge. He will answer to the toast of—

Amateur Photography.

MR. CHAIRMAN AND GENTLEMEN: The praise photographers give amateurs, I suppose, is just, but is hardly deserved by the whole class. We must divide them into two classes, and the dividing line is very distinct and very sharp. During my travels for some months past I heard words from professionals that made me feel that it is an honor even to bear the name of an amateur photographer; and the credit is given justly undoubtedly, for a great number of the most important photographic discoveries are due to amateurs. But such men are something more than amateurs; they deserve the name of investigators. With their work you are all familiar.

The amateur proper, who takes up the art from pure love of it, is a man more wonderful in every way than the professional or the investigator. He will do things calmly that would drive every professional out of

business. He will achieve results that I think would certainly close every gallery in New York City. Meet him, and so much as put your finger up to him crooked with interrogation, and he will overflow with interrogations and explanations on the wonderful character of what he is doing and his marvels, and they are endless.

I could spend a whole evening in telling you—having begun in the days when there were no helps for amateurs—how I got a professional to come and instruct me, a poor amateur, develop a collodion dry plate, and how he mixed the wet plate developer for me. It was surprising how that poor fellow worked, and finally gave up the thing as a bad job. He did not know why it was his developer would not work on a dry as well as on a wet plate. Then he took my little 3 x 4 plate, and using the developer that came with the plate developed it by pouring on the solution; and just fancy the quantity he took, when it was developing for about twenty minutes. Then, full of enthusiasm and the most childlike admiration for my work, I started three or four of my friends in the business. Then I saw the error, and repented, but it was too late to be forgiven. One of them came to me with four or five dozen negatives. He reached into his vest pocket and took out perhaps a dozen or twenty plates, each about one and a half inches long by three-quarters of an inch wide, and wanted to know what the trouble with this one was, and why the others were not not as good as that one; and then went into the other vest pocket and brought out another dozen plates, and went through the whole thing, recounting to me the most wonderful things that happened in developing. I was tired. I asked him what kind of a camera he had. Well, he stuttered a little over that; but it seems it was made out of a cigar box. The lenses had stops of a sixteenth of an inch opening, and originally were part of a pair of opera glasses. I could not stand it. It was too much advice on too small plates. He knows better now, and works with a Dallmeyer rapid rectilinear. Then another friend came to me and wanted to know why it was that he

had taken a very nice picture and negative all right, but as soon as he had put it in the hypo, the picture slid to one side. That puzzled me, so I had him bring the plate to me. It was plain enough then; one-half of it was fixed and the other half was not. He has graduated also, and is using plates professionally at present. They gradually get out of the amateur business. But, thanks to my good friend Roche, who has educated many of all these wonderful amateurs as well as myself, some have developed into very respectable photographers.

Amateurs are having their use. They are very appreciative admirers of good photographic work. They know a picture now when they see it, and when they see first-class work (almost any of you gentlemen produce it), there is an admiration that no layman ever experiences who has never attempted to make a picture. We know something now of the difficulties you have in taking a face with a turned-up nose, the blotched complexion, and awkward, angular form, to make really artistic pictures of them. We know something about the difficulties of bringing out those deep shadows, and toning down high lights, and properly managing so as to secure a harmonious composition, deserving to be called an artistic picture.

Then the amateurs are doing one other thing of value. They are going into every corner of the earth, and they are bringing back negatives and pictures which probably professionals never could get. They are putting on record facts that will be of value in all ages. I wonder what man ever stood beside Dr. Kane's collection of Daguerreotypes and did not feel a respect for the man who, with the thermometer 60° below zero and with the old Daguerreotype process, could bring back from those frigid regions beautiful, artistic work. I think I am justly proud even of the second division of the amateurs, and as a representative I feel flattered to be among them, and to tender to Mr. Roche our most hearty thanks for his assistance to us in learning what has been to many of us a very long and difficult but most delightful lesson. (Applause.)

The CHAIRMAN. We have next to hear from our friend Mr. Percy A. McGeorge, who responds to the toast of—

Art Photography.

MR. CHAIRMAN AND GENTLEMEN:

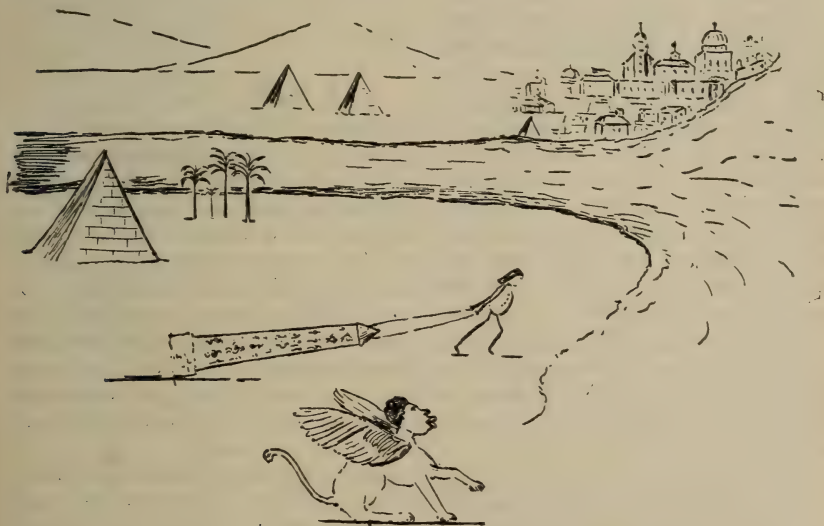
This trying toast has been drying on my palate so long that I fear I can't get it off, and the subject is such an endless one that it is difficult to find the place of beginning. However, I'll try to get into the *art* of it as soon as possible, and if I fail to reappear, kindly set me down as a lost Pleiad.

Art photography is said to be one of the lost arts. It was known to the ancients. The Chinese, the Hindoos and the Egyptians all claim to have discovered it, I believe. Like our own beloved and lamented

aborigines, they were great admirers of art, and we might give them the benefit of the doubt. The Egyptians were good in colors, too; and in that respect, perhaps, just a trifle ahead of us. (Laughter.)

But I am wandering. (The speaker wandered frightfully, amid great laughter, and then resumed as follows): Art photography in colors is another lost art. Some people imagine it has always been lost, but that is a grave mistake, as Mr. Bogardus told us the other night. A Mr. Hill discovered it long ago. But he found it rather an up-hill business, it seems, up there among the Heidelbergs, and he lost it again soon after, poor fellow! Papa Roche comes as near to it as any one, perhaps. Ask him.

Yes, my friends, the Egyptians were great



admirers of art. They fairly idolized it. Why, their national emblem was the symbol of art, *I art*, as good old Lindley Murray might have called it—the serpent.

Now the Egyptian serpents discovered the fascinating art of biting their tails, and when they indulged that æsthetic fancy, every head was bowed and every body bent in humble and astute admiration. Such excessive ecstasy and veneration is another lost art, and probably lost for *good*.

There are several explanations of that devotional seance. One is, that the beginning and end of things were thus thought to be happily blended, and the two great extremes of infinity and eternity forever united. Another improbable theory is, that that charming creature was simply drawing on the fancy, and endeavoring to reproduce a copy of his own inimitable colored art photograph within the wide angle rectilinear optics of his entranced beholders. (Laughter.)

But before this interesting toast is utterly relegated to the lost arts, kindly permit me to give you the benefit of my own extended experience and observation. As an art photographer of many years standing (I entered the dark room at a very tender age), I found it extremely difficult to become very much of an art photographer without being something of an artist; and I found it equally trying to become very much of an artist without being something on the draw.

I repeat it, sir; the Egyptians were passionately devoted to art, and they were great draughtsmen—a little wild in their perspective, perhaps; but they did not mind that; they knew that distance would lend enchantment; and so it does. At this late day we hardly notice it.

They draw tolerably well to day, some people imagine, as Brother Wilson will tell you. And the ancient Egyptians are said to have drawn that nice little monolith up there in the Park, which we call Cleopatra's needle, all over Egypt; and they drew all over the needle; and they drew Cleopatra herself, in her barge, in company with a distinguished art photographer of the period, a Mr. Marc Gambier—No, I am mistaken; it was Mr. Antony—Mr. Gambier was not then in the business; and they drew the water off the Nile. Just now, sir, they are having a spirited little contest with our transatlantic cousins, and giving them a few striking and effective examples in the art of drawing the sword. (Laughter.)

I hardly credit, it, sir, but rumor has it that, in conjunction with the distinguished French civil engineer M. Ferdinand de Lesseps, the modern Egyptians intend to draw the water off the English Channel, so as to facilitate the retreat of the African Zouaves from the *Sou dan*. It is hoped, however, that the Egyptians will deservedly get a little *worsted* at the end, because they were now such shockingly rude drawers. (Laughter.)

One word more, for I wish to carry you for a moment back into the remote ages of the prehistoric past. Recent discoveries of fossil remains conclusively prove that art

photography was even then known, and had attained a high degree of perfection.

Yes, my friends; the camera obscura is veritably man's birthplace. Within its secret recesses are limned form, face and feature, and within its wondrous laboratory all arts evolve. Therein atom begets atom and corpuscle unites to corpuscle till the perfect photograph is finished—a living likeness of a living Being!

Gentlemen, faint traces of a smile disturb the physiognomy of our worthy chairman, and admonish me that I must desist. If I leave you a little in the shade on a subject of such paramount importance, kindly forgive me. (Laughter and applause.)

The CHAIRMAN. We have a distinguished gentleman here, who may not be known to you all, Prof. Dudley. He has kindly consented to respond to the toast—

Microscopic Photography.

MR. PRESIDENT AND GENTLEMEN:

I feel honored in being requested to reply to the toast—“*Microscopic Photography*,” for there are others who from years of labor, when the difficulties were far greater than at present, could speak from experience of the obstacles overcome, which occur in the development of any art. The knowledge which the earlier laborers in this branch have made known now enable us, with our present facilities, to enlarge and extend the scope of this instructive and highly important branch.

One of the earliest workers in this direction was the late Dr. John William Draper, whose memory is doubly dear to every photographer, for it is now conceded that he was the first to apply the daguerreotype process in taking portraits—his sister, now living, her face sprinkled with flour, sitting *thirty minutes* in full sunlight to obtain the result. His experiments with bromide of silver in photographing the spectrum were made in 1834 to 1837, long preceding the discoveries of Talbot and Daguerre. His photo-micrographs, made on daguerreotype plates long before the era of collodion, are simply wonderful, and taken with a micro-

scope which the merest tyro would now consider unsuitable for his use. We have not been able to improve upon his blue cell in simplicity or effectiveness, to render the sunlight monochromatic, for this branch of photography.

The medical profession have up to the present time made the most extensive use of photo-micrographs in prosecuting and recording their researches upon the causes of human suffering, the means of alleviation, and further prevention. They have long recognized its value for quickly recording what they see in the microscope with a fidelity and exactness otherwise impossible, which at the same time can be reproduced in unlimited quantities, and disseminated, increasing the benefits of the worthy laborers many fold.

It is in this way that differences of views may be reconciled, facts separated from opinions, and the truth finally gained.

The years of labor devoted by a few men to the discovery of the micro-organisms, which are supposed to produce certain diseases or epidemics, recording the results by photo-micrographs, will render their names immortal.

Thanks to you, able photographers, who have rendered such results possible; also to those who have devoted so many years to render practical the sensitive dry plate, which gives us the means of doing much by ordinary lamp light that was only possible a short time since by electric light or the sun.

Our opticians have not been idle, and now with a good $\frac{1}{16}$ or $\frac{1}{32}$ -inch wide-angle homogeneous immersion objective and simple 8 x 10 camera we can amplify many subjects to 1,000 diameters, covering an 8 x 10 plate, and obtain good results by these means that a few weeks since were unknown.

There is much discussion as to the utility of the eye-piece. When it is good, a large range of work can be done with it in a camera so compact that the object may be adjusted, focussed, and the operator can look on the ground glass at the same time.

Improvements in the eye-piece will ex-

tend the scope of the simple camera. The use of a supplemental eye-piece to directly view the image for focussing, instead of on the ground glass, when great amplification is required, is a step in advance of preceding methods.

There has been much discussion as to the possibility of making accurate micro-metrical measurements, to reproduce delicate, even lines upon the gelatine plates. Thanks to the one we honor to-night, we have a film so firm that we can obtain accurate measurements and even lines. For such work the developer is very important. The soda developer, so far, gives me the best results.

In science, the arts and manufactures, photo-micrographs are fast being recognized as a means of research and record indispensable to the highest degree of success, and the Boston Institute of Technology is preparing to give instruction in its applications as one of its branches of study.

The photo-micrograph is one of the universal languages of the scientific world.

The CHAIRMAN. The next on the list is a gentleman well known to you all, Mr. Theodore Gubelman. He will respond to the toast—

Instantaneous Photography.

MR. CHAIRMAN AND GENTLEMEN. By an instantaneous photograph I understand a picture made in a period of time that shows objects in motion, a picture perfectly defined. All photographers know that if we take, for instance, a photograph such as we made but a few years ago of any river, harbor, or ocean scene, the water was always represented by one white glare. Look at the work of to-day and you will see that art has been resorted to; knowledge has taken the place of inexperience—the white glare is missing—and in these instantaneous pictures every little line and movement is plainly visible; every high light and shadow. They are now a record of passing events, such as steamers in motion and great parades. All this has been done, as you probably well know. Many

artists and lovers of art find objection to these true pictures, and say that they are not artistic—that they are not as the eye sees them. It is true that it may not exactly suit the eye; but I claim that if the artist knows the truth and sees it as it must be in nature, I am certain that he can make outlines in his paintings far more truthful and better, if he knows the exact truth, and knows how far he may deviate from the exact truth, and keep within certain limits; and therefore I claim that instantaneous photography will be a valuable aid in high art. Gentlemen, I would like to honor all those who have contributed to the advancement of art, both on this side of the Atlantic and on the other, as we honor Mr. Roche to-night; and may they continue to contribute their efforts, so that one day they may bring photography to such perfection that there will be nothing more to criticise. (Applause.)

The CHAIRMAN. We have a stranger here, but one who is probably known to some of you, Dr. Gammage. He will respond to the toast—

Ladies and their Influence on Photography.

MR. CHAIRMAN AND GENTLEMEN: I am very happy to think that this is a stag party, and more particularly happy to think that no ladies are present; for if there is artistically speaking in the world an everlasting terror to photographers it is the feminine sex, and you know it. To be able to please a lady with a picture is one thing, and to be true to art is another. That which is true to nature is false to woman. With the usual fickleness of her nature she rejects everything that does not belong to the sublime and beautiful, and it matters not whether her proboscis be *retroussé* or otherwise, she wants it just so; and if the photographic artist does not make it just so it is a failure—a horrid picture—and she won't have it; and you know it just as well as I do. The time will probably come when the ladies with increased facilities for knowledge will recognize the fact, which we

men all recognize, that the real photographic artist is the man who reproduces in all its exactitude and truthfulness nature as presented before the camera, and that anything outside of that is so much falsity. I have seen some pictures—I don't like to be personal—but I know some artists here who have great names in New York, who produce admirable pictures. Why I, some time ago, went and had my own picture taken—and I am not a woman—and I was amazed when I saw it. I was overcome, and hastened to my wife and told her that I was the best looking man in Brooklyn; but when I looked at myself the next morning after taking a bottle of wine, I exclaimed, oh, heavens! look on this picture and then on that. (Laughter.)

This is one of the humorous sides of photography; but plainly and seriously there is a gentleman here I think it is the duty of every photographic artist to thank, our friend and your friend, Mr. Roche. The photographic artist has a great mission to perform. I am no artist, and make no pretensions that way, but I know that the work which a man performs must depend upon the tools with which he does it. A man of great and grand conceptions in the photographic art, or as a painter, with noble inspirations and ripe ideas of a picture or a scene, unless he knows exactly how to prepare the apparatus or the pigments, that man will fail; and whosoever in art or in photography prepares the apparatus and makes it plain and easily attainable by the opera or is a benefactor to the fraternity in particular and to the community at large. As I understand it, in that particular alone our friend Mr. Roche is your friend and benefactor, and in that sense a benefactor to the community at large. (Applause.)

I was to speak of the ladies. Well, I will not say anything about them. The best thing to do is to drop a tear and leave them in silence. We respect them. Those of us who have wives ought to love them, and I know we all love our children. I have said one thing disrespectful about them in photography; but I have only to say, I like the grand old style of women. God made

woman; the fool made the lady. Woman! God made her, and we all love her and look over her little foibles and her little faults. She is our mother, our wife, our daughter; and we all love her. (Applause.)

The CHAIRMAN. We have next to hear from Mr. J. F. Coonley, who responds to the toast—

Experiences in the Dark Room.

MR. CHAIRMAN AND GENTLEMEN: In reply to this toast I will say that I think it is rather a dark subject to illuminate, and since the introduction of the gelatine method it is quite a dry subject also.

Nevertheless it is the point around which centre more hopes and fears, and is the source of more anxiety, than any other department in photography. From its dark recesses are handed down and perpetuated the light of innumerable objects, both animate and inanimate, whose light and existence have been extinguished forever; it has also the power of transmitting to us a very fair idea of how handsome, or *vice versa*, our grandparents were—that was before the days of excessive retouching—and if it does not convey to posterity a correct estimate of how we at this day appear, it will probably be near enough to satisfy them of all they will care to know. All animal and most vegetable life has its inception in darkness—the beginning of photographic life is also in darkness in more senses than one—and often remains so through a long period of its existence.

There are some peculiar people in this world who object to having a representation of themselves handed down to posterity; but their reasons are often decidedly original and the points well taken. I can better illustrate this by an anecdote of what occurred in my experience when in business at Charleston, in 1868. An old gentleman, not very prepossessing in his make-up and appearance, came in to have a picture taken, and was very particular to have it understood that he wanted only one print, and that then the negative must be destroyed. After the sitting I asked him if it was not possible his friends or relatives might want

a picture of him, or perhaps he might want more himself at some future time. He said they could want them as much as they liked, but he was not going to leave his picture behind when he died to let his grandchildren see what a d—d old fool their grandfather and great-grandfather had been. This man had great consideration for the generations to follow, and he was a philosopher.

The CHAIRMAN. We will next hear from Mr. Atwood, who will respond to the toast—

Printing Photographs.

This subject reminds me of a story that was told of a strong-minded, intellectually inclined lady who went to a well known publisher. She wanted to know the difference between printing and publishing. In explaining, he said, "If I should kiss a young lady on her cheek, that would be printing; if I should go and tell everybody of it, that would be publishing. (Applause and laughter.)

MR. ATWOOD. *Mr. Chairman and Gentlemen:* I will say that the weather this winter has given me no feeling to exhaust your bucolic natures, nor do I know that I can draw upon your imagination in the least. I claim for the printing room that photography in its advancement takes a place among wood, steel and copper-plate printing. When the dark days of the past winter came upon us, there is one present who came to our assistance, Mr. Roche with his rapid printing paper; and from the flash of light from match or cotton millions of copies can be printed. I merely wish to say, in addition to the letter written by Mr. Anthony, that if there should be raised a monument to photographic art on the pedestal of which shall be placed the amateur, the professional, the operator, the promoter of every work and fact, the one who will stand on top will be Mr. Thomas C. Roche.

The CHAIRMAN. Gentlemen, the list is growing short. We will now hear from Mr. Henry Grenier, who will respond to the toast of—

Wood Engraving.

MR. CHAIRMAN AND GENTLEMEN: I have nothing to say on the subject of wood engraving, because I desire to speak of something else, only a simple thing. It has been explained why we are here. I commenced the canvas last October, and in the space of one week I had over fifty-five dollars. Among the first to give material aid was Mr. Bogardus, Mr. Chas. D. Fredericks and Mr. J. C. Moss. Then, finding so much money on hand in so short a time I thought it advisable to get some responsible party to hold it (laughter); so I went to Mr. Wilcox and asked him to take charge of the fund; and when a reasonable amount was obtained I requested Mr. Wilcox to purchase a watch. He did so with great discretion, buying the works at one establishment, the case at another, and had it engraved at another; and no one knew anything about it except Mr. McGeorge.

When I saw Mr. Roche hard at work night and day, and sometimes on Sunday, and for the many years this had been going on both winter and summer, I thought it was about time that some one should give him a testimonial to encourage him, and that it might so invigorate his energy that he would go ahead and achieve greater successes. I feel fully compensated this evening; and although I see so many of you present, there are a great many absent who generously responded. I am sorry they are not here. The committee are appreciative of the success of this evening; and Mr. Roche may now see for himself how much the photographers in New York think of him and applaud his energy, his perseverance, and his acknowledged services to the fraternity. (Applause.)

THE CHAIRMAN. Capt. A. J. Russell will now answer to the toast—

Photo-relief Engraving.

MR. CHAIRMAN AND GENTLEMEN: Every one here understands something about it. There was a time when I did not know much in relation to it; but what I do know Mr. Roche was my instructor. I was at

that time at work on Frank Leslie's illustrated newspaper, and he was having work done by a firm in New York. He wanted the work done for a little less, and that firm turned the cold shoulder on him, and said they could not do it less. Mr. Leslie then came to me and wanted me to do something for him in this line. I said, "I don't understand anything about it." He said, "can't some of your friends help you?" "Well," I replied; "I know but one, and that is Mr. Roche." Mr. Leslie then said, "You go and see Mr. Roche, and see what he can do." I was glad to go out for a walk, and went up to see Mr. Roche, and I put the question to him point-blank. He said, "well; I don't know. I know something about it, and am perfectly willing to tell what I do know." So he gave me what information he had. I went back to work, and the result was that we produced plates and used them in the paper within the first month, and from that time to this they have been in use in that journal.

Photo-relief engraving, of course, commenced to be of practical value about twelve years ago, and has continued steadily to grow. Great improvements have been made, until now it forms one of the principal means in producing engravings or representations of drawings made by the artist with pen or crayon. It has done more to bring before the public illustrations of what is going on in the world than any other kind of engraving or drawing. There are now in this city about forty different companies and individuals producing pictures by the different processes of photo engraving, and they have arrived at such perfection that they can reproduce literally the touch of the pen or crayon artist, which almost rivals photography itself. I can say, and say justly, that Mr. Roche was the father of all the processes in this city with the exception of two—the one Mr. Morse is working and the photo-electrotype.

THE CHAIRMAN: Mr. Firmbach desires to say a few words on—

A New Process on Zinc.

MR. CHAIRMAN AND GENTLEMEN: I

suppose you have all heard about the spectrum first used in 1864. Mr. Roche was the man who made the first negative on a plate 8 x 10; it had ten thousand lines on it. We have graduated since then, and have a process that is quicker than ever. I can take any negative you gentlemen may make in the morning and by noon have it in the power press, and take that negative and make a transfer of it on zinc or stone and put it in the power press within two hours. (Applause).

Mr. BOGARDUS. Mr. Chairman, before we separate I have a motion to make. I move that we as a body pass a vote of thanks to the committee who conceived the idea, and who have so successfully carried out this entertainment to our friend, Mr. Roche. The motion was duly seconded and passed unanimously.

Upon motion of Captain A. J. Russell the meeting then adjourned, when the festivities came to a pleasant close, and the jolly company reluctantly dispersed.

Professional vs. Amateur Photographers.

THE ever-increasing number of amateurs who within the last few years have joined the ranks of photography is a positively startling fact. In estimating the results that have followed, and are likely to follow, the introduction of gelatino-bromide plates, it is one which many professionals look upon with undisguised alarm—whether rightly or wrongly, we propose to discuss. Such is the unreasonableness, such the want of proper feeling, displayed by some that they choose to term “interlopers” the very men to whom modern photography may be fairly said to owe its existence. We cannot avoid thinking that it shows to what a height of selfishness, or, perhaps, we ought to say, egotism, some persons can soar.

Photography is almost essentially the product of amateur experiment, the main result of which has been given to the world untrammelled and unpaid for. We all know of the early patent which was taken out for a photo-

graphic method, but it was soon relinquished entirely for the public benefit. Commercial photography—photography, that is, of magnitude—may truly be said to date from the introduction of the collodion process. What was done for its inventor by those who had risen to affluence through his means—the man who, practically, had invented a new art, a new industrial pursuit, a means of livelihood by which we are fairly within the mark in saying tens of thousands gain their daily bread—the man who enabled scores of decayed gentlemen, discharged clerks, and unfortunate tradesmen, not to speak of worthless handicraftsmen, the broken-down butchers, bakers, and candlestick makers who rushed at the new means of making a lazy living, soon to be a luxurious one, without training being needed or knowledge required? What was done for him? We should be ashamed to name the contemptible sum that was raised for the benefit of those he left behind him.

Are not, rather, the professional photographers themselves interlopers? Gelatino-bromide is to all intents and purposes entirely the outcome of amateur efforts; yet, if we were to see at the dealer's counter some of its earlier exponents side by side with a member or two of those great firms who order a few thousand plates at a time, we are afraid that the former asking for a few dozen of the things he had called into existence, would have to bide his time till the interloping professional had been supplied.

It will not suffice to say that amateurs of this kind are not meant—that the amateur who buys a small apparatus and a good supply of chemicals, and goes about taking his friends' portraits in every direction, is the class which is objected to—for to imply this would be making matters still worse, and would be tantamount to saying that “we will not murmur at those people photographing without pay or reward, who are likely to invent something new that may turn to our benefit; but we don't want any one to come photographing if we are not to gain by it.” We appeal to the broader-minded—whom we really believe form a far larger proportion of our readers—if we have

not rightly stated the way in which many professional photographers speak. Thus we see it is as ungenerous as it is illogical to complain of the influx of amateurs, and we do not think it will be difficult to show that it is equally unwise in every way to offer the "cold shoulder" to them.

The absurd action of a firm of American photographers, who notified the closing of their account with the stock-dealers with whom they did business, on account of these dealers selling materials to amateurs, has been well laughed at by the intelligent men of business on either side of the water; but it is a fair example of the feeling we describe and deprecate. On many grounds we should advise professional photographers to encourage and assist the increase of amateurs. An example will illustrate our meaning. Let there be two or three well-known photographers in a town, one of the three only sharing our views. If he show courtesy to amateurs he will enlarge the circle of his *clientèle*, and, more than that, it will be a strange neighborhood if he be not able to obtain an occasional pupil. This, even to a prosperous photographer, is all pure gain, as he could make appointments for lessons. If he charge (we could give instances where this is done) a guinea for a lesson of one hour, it will be fairly paying work, and he will naturally both increase his reputation and his business—the other two photographers we have supposed, as a matter of course, losing to that extent.

Many professional photographers have made acceptable additions to their income by teaching and supplying apparatus; though we have heard them complain that there is so great a demand for apparatus that the dealers and makers do not care to allow them a discount or commission, they being able to sell at first hand all they can produce. This is a point upon which it is not our province to enter; but we may be sure that the inexorable law of supply and demand will very soon cause a levelling of inequalities of this character.

We have kept to the last the most formidable difficulty—formidable in appearance only—the expectation that the more

work done by amateurs the less there will be for professionals. This we, and many with us, believe to be a pure figment. Photography, nowadays, is a very different thing from what it was even a dozen years ago. The pictures which then would have delighted their originals would not be looked at now, on account of the increased excellence that characterizes photographs from the average professional and the added work of the retoucher. Now we would ask—Is it reasonable to imagine that any everyday amateur could be, in the brief time which he can give to the work, at all likely to produce anything that will compete against good average professional photography? On the face of it the supposition is absurd. Hence, no loss could occur from any such course; and, further, the difficulties that the amateur will find to beset the production of really good work would, through the very publicity obtained, place the professional photographer in a better position and enhance the reputation of his skill.

Finally: we might add that, in intimate circles *cartes* and cabinets of friends were produced, a knowledge of human nature would enable us to predict that the self-same people would come to be taken by the professional portraitist; and thus, as in all other ways, would amateurs aid the professional photographer and improve his status.
—*British Journal of Photography*.

A New Combination Developer for the Tropical Dry Plate.

No. 1. For Stock.

Water, 30 ounces; Anthony's pyrogallic acid, 30 grains; oxalic acid, 10 grains.

No. 2.

Water, 20 ounces; Anthony's pure carbonate of potash, 600 grains; Anthony's crystallized carbonate of soda, 400 grains; Anthony's crystallized sulphite of soda, 100 grains; strong liquid ammonia, $\frac{1}{2}$ ounce; bromide ammonium, 10 grains.

For $6\frac{1}{2} \times 8\frac{1}{2}$ plate take 3 ounces of No. 1 and $1\frac{1}{2}$ ounces of No. 2. Add half an ounce or more of No. 2, if required to bring the picture fully out.
T. C. ROCHE.

[From our Special London Correspondent.]

FOREIGN NOTES.

A New Pigment Process Applicable to Enamel Photography and the Production of Pictures on Wood Blocks.—A method of printing having some similarity to the ordinary carbon process has recently been described by Lieutenant Pavloffski of St. Petersburg, but in the new process bichromated gum is used as the sensitive vehicle with which the pigment is incorporated. There is, however, another circumstance beyond the mere use of gum instead of gelatine, which renders the Pavloffski process especially suitable for enamel work with vitrifiable pigments, and this is the fact that a very small proportion of organic matter (gum) remains finally with the pigment which forms the picture.

The sensitive mixture is formed by dissolving twenty-five parts of selected gum arabic in one hundred parts of water, which has been recently boiled in order to expel as much of the dissolved air as possible, and when the gum has completely dissolved the mucilage is strained through a cloth into an evaporating dish. The pigment is now added and it may consist of lampblack, if pictures in black and white are required, or of a mixture of lampblack, indigo and alizarine lake may be used, if it is wished to imitate the tone of an ordinary silver print. When, however, the picture is to be vitrified on glass or porcelain, a suitable pigment, as manufactured by the potters' color makers, should be used. The proportion of pigment will necessarily vary according to its covering power, but from sixteen to twenty parts may be taken as a rough estimate. In any case the pigment must be very finely ground, by means of a muller and slab, with a little of the gum solution being also used in reducing the color. When the color is thoroughly incorporated with the gum, six parts of bichromate of potassium are added, this having been previously dissolved in the smallest possible quantity of hot water. The sensitive mixture having now been thoroughly stirred and strained

through flannel is ready for use, and it may be preserved for nearly a week, if kept in a cool and dark place.

The next step is to coat patent plate glass with the mixture; but in order to prevent the preparation chipping off when dry, the glass should be previously cleaned by friction with a weak solution (say ten per cent.) of soluble glass (silicate of potash), or instead of the soluble glass a solution of lump sugar in water may be employed.

The prepared glass having been levelled either upon a warm marble slab or in a drying cupboard, some of the sensitive preparation, previously heated to about 190° F., is poured on. Any excess is allowed to flow off at the edges, and the drying should be effected at a temperature of about 120° F. In ordinary cases the plates are dry in half an hour, and they should be exposed under the negative while still warm; it is, however, well to dust the sensitive surface over with French chalk to prevent adhesion. A long exposure is not required, indeed less than one-fourth of that required for a silver print is generally sufficient; care should, however, be taken not to under-expose, as it is easy to force the development. When the plate is taken from the printing-frame it is coated with plain collodion, and after this has firmly set a stream of cold water is poured over it. This softens the gum coating underneath, and causes a puckering up or blistering of the collodion. A sheet of rather thin paper, not too strongly sized, is now soaked in water and laid on the wet collodion film, contact being established by gentle pressure with the hand or with a squeegee. One corner of the film is now detached from the plate by means of the point of a penknife or a needle, and as the corresponding corner of the paper is gently lifted the collodion is released all round the edge by the point. Under these circumstances the collodion will readily strip off on the paper, and will bring with it the partly developed image. The stripped sheet being now laid film upwards on a clean glass plate, is gently sluiced with cold water until it is nearly free from the soluble or unexposed mixture. This particular moment

must be carefully watched, and if necessary the development must be retarded by pouring over the impression very dilute spirit (20 parts alcohol to 100 of water); afterwards flood with equal parts of spirit and water, and finally pour on a small quantity of absolute alcohol, which latter will completely arrest further development, and the picture is ready for transferring.

Next comes the transfer. To do this, take the enamel tablet or wooden block, as the case may be, and lay the sheet with the picture face upwards on the reverse side of it. This arrangement is convenient, as it allows the operator to easily choose the position the picture is to occupy. The next step is to cut round with a pair of scissors close to the edges; then wipe the face of the tablet or block, and coat it with a mixture of one part of thick gum mucilage to three parts of weak spirit. Pour a little of the same mixture on to the picture, and with an adroit movement reverse the picture so as to bring it on the surface it is intended to occupy, slightly pressing it with a linen cloth, towel or squeegee. If the transfer is made to an enamelled tablet, or glass, then the drying can be accelerated by heat; if to wood, ivory, or canvas, then it must be allowed to dry spontaneously. In the latter case, however, the paper support may be removed as soon as the transfer is made.

To wash off the collodion, equal parts of alcohol and ether are used at first, and afterwards ether alone; this dries immediately without having imparted the least humidity to the boxwood block. This last point, it must be remembered, is of very considerable importance, as experienced engravers very well know, for blocks treated with ordinary liquids, although whole and sound enough when put into the engravers' hands, not unfrequently split and spoil during the operation of cutting.

As soon as the ether has evaporated, the picture is ready for the engraver, without any varnish or protective coating being necessary; its hygroscopic character will prevent the film from peeling off or splitting during the operation of cutting; neither

does the film, such as it is, offer any resistance to the graver, as his breath alone is sufficient to keep it in a supple condition.

If the pigment is a vitrifiable one, and the transfer is to be burnt in on porcelain or glass, it is needless to remove the collodion, as it burns away without occasioning any inconvenience. Before fixing, however, a glaze is applied. For this purpose a pad or dabber is made, this being covered with fine silk, and the pad is charged with a mixture of turpentine varnish and easily fusible glaze. Another method of glazing is to flood the plate with a thin varnish, drain off the excess and dust on the powdered glaze.

This process appears to be capable of widespread application, and under these circumstances its publication in full working detail is of importance as barring any patents which may be founded on it. The *Photographic News*, which was the first to publish the method in England, speaks very highly of it.

A Self Registering Printing Frame.—Small pictures on opal glass appear likely to become popular in London, and hence some interest centres upon a very simple arrangement, devised by Mr. K. Offord, by which the opal plate can be removed from the printing-frame for examination any number of times without risk of losing the register between negative and print. A common printing frame is taken, of the kind usually sold without a glass bed, and in place of the wooden back a piece of stout zinc or tin plate is used, care being taken that this projects at each end nearly to the edge of the frame. To this sheet of zinc or tin plate an india-rubber suction plate is rivetted. The rubber sucker should be about an inch in diameter and about one-tenth of an inch thick, soft red rubber being best for the purpose. The subjoined cut will give an idea as to the nature of the sucker, only the rivet should not project inside the rubber bell as much as is shown in the drawing.

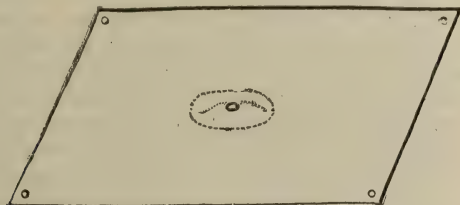


The sucker is moistened with glycerine

when in use, and the opal plate adheres very securely.

In order to secure the immobility of the negative in the frame a piece of glass is first fixed in the rebate with melted shellac

and the negative is secured to this with narrow strips of gummed paper. The register of the sucker plate with the frame is ensured by four holes, one at each corner as shown below, these holes fitting upon small



pins driven into the woodwork of the frame. When a large plate is used, several suckers may be attached to the zinc plate. It is convenient to cover the lower part of the zinc plate with a thick piece of felt, one or more round holes being cut out for the sucker or suckers. This arrangement keeps the opal plate steady, and effectually prevents any tendency to slip if ordinary care is exercised in shifting the back.

Emulsion for Small Pictures on Opal.—

The article in which the *Photographic News* described the registering frame of Mr. Offord gives some particulars as to an emulsion which is especially suitable for small work on opal plates. The following are the directions given:

For a small quantity we take eighty grains of hard gelatine, and dissolve it by gentle heat in one and a half ounces of distilled water; into this we pour a warm solution of silver nitrate, seventy-five grains in half an ounce of distilled water. We have previously taken the precaution of well drying a little sodium chloride and a little potassium citrate, and of each of these salts we take twenty-one grains, and mix them in half an ounce of water, dissolving by heat. This mixture we pour gradually into the warm gelatine and silver, stirring all the time, and then pour out the emulsion thus made into a small dish to set.

We prefer working in yellow light at this point and onwards, though a distant gas light is no doubt harmless in such a process. When the emulsion is set, we take

a basin of water and a piece of mosquito net, and squeeze the jelly through the latter into the water, keeping the hands below the surface, because this emulsion is much more easily melted by the heat of the hands than a firm gelatino-bromide. After five minutes, with an occasional stir, the water is poured off, and the basin filled up again. In another five minutes the water is again poured off, and the emulsion is thrown on to muslin stretched over some vessel, and allowed to drain for half an hour, when it can be melted up at a low temperature: Two drams of alcohol must be added, in which three grains of salicylic acid are dissolved, and one grain of chrome alum dissolved in a little water by heat. Upon filtering it through some fine material, such as two folds of cambric, the emulsion is ready for coating the plates.

It will be understood that the method recommended is not a development process, but that the printing should be carried on as deeply as for paper, and vignetting, which is by far the most suitable style, should be done either on a turn-table, or by frequently moving the frame to different positions. The washing must be very thorough, five or six waters not being too many, nor twenty minutes in all too long. Toning we succeed best in accomplishing in a borax bath, such as the following:

Borax one ounce dissolved in eighty ounces of water, and when required for use add one grain of gold to each eight ounces of the solution. Fixing in twenty per cent. hypo.

bath for at least ten minutes completes the operation, and the usual washing as for negatives must of course be thorough.

Photographic Societies.—During the past five years a notable change has taken place as regards the nature of the photographic meetings in London; the old fashioned formal meeting having given place to a kind of free and easy gathering, in which those present range themselves around a long table and imbibe liquors or eat their suppers while discussing photographic matters. The first step in the innovation was the institution of social evenings for photographers by Mr. Brittlebank in 1879; this gentleman having kept open studio for every Wednesday evening during nearly a twelvemonth, after which the Photographic Club was organized, and as an off-shoot of the latter arose the London and Provincial Photographic Association. Each of these societies holds a weekly meeting of the free and easy type, and it is curious to note how almost every novelty of any importance gets its first introduction at one of these weekly meetings. Indeed so far do the weekly meetings appear to be forestalling the older societies that the Photographic Society of Great Britain has instituted intermediate monthly meetings of a social character. These gatherings have not as yet overtaken those of the newer societies, and one may perhaps find two reasons for this. In the first place the tea provided by the Photographic Society does not develop the social instincts so thoroughly as they are developed by the stronger liquors which can be had at the Club or the Provincial; while the new meetings of the Great Britain Society have unfortunately been named "technical meetings," an appellation previously given to the first meeting in each session of the South London Society. Few who have watched the recent developments of photographic associations can doubt that the old-fashioned and highly formal meeting has altogether lost its hold upon the photographic public.

Spurious Lenses.—More or less skillfully made imitations of the lenses of reputable makers have long been recognized

articles of commerce on both sides of the Atlantic, and in most cases these imitations have been passable instruments, while in some instances they have been excellent. Under these circumstances a not very great evil has resulted when a forgery of the name of the optician has accompanied the imitation of his work. Quite recently, however, a new class of imitation lenses have appeared in great force. Neatly made brass tubes, resembling in external design and finish the lenses of the best makers, have been sold in great numbers at certain auction rooms in London, but the glasses are completely and entirely frauds. There is usually one convex lens, so that the tube will throw some kind of an image, and after this a disc of window glass serves to give the instrument the appearance of a doublet. The mounts appear to be manufactured in quantity, and any waste glasses whatever which may be to hand are fitted in, so long as the whole affair will throw some kind of an image on the screen. On one occasion when a number of the bogus lenses were offered by an auctioneer, a person who was present called his attention to the nature of the goods. Not a bit abashed he said, well, then; we will call these brass mounts and glasses; and he proceeded to sell the trash. Many of the lenses find their way to the toy shops and bazaars, where they are made to form parts of surprisingly cheap sets of apparatus, while others find resting-places in the pawn shops, where they form constant stumbling-blocks to the amateur commencing. The auction-sale rooms, however, seem to be the wholesale agencies for the false lenses.

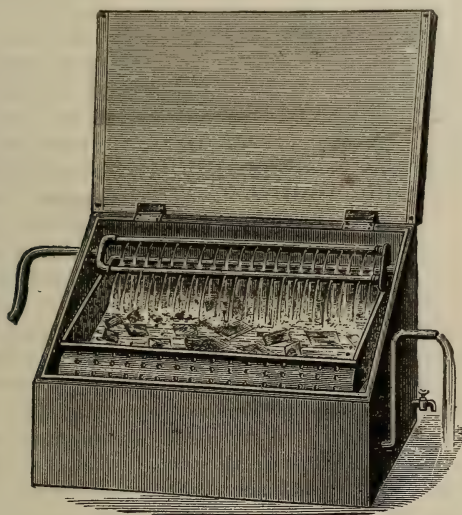
A Washing Box for Prints.—A washing apparatus which seems to offer some advantages when a very abundant supply of water is available has been introduced into trade over here, and the arrangement is represented by the subjoined cut.

It consists of an outer cistern or tank provided with a lid, and inside this is a perforated cell or cage with a curved bottom. A series of jets, coming from the two parallel tubes shown at the back of the cistern, are so directed on the surface of the water

in the perforated cell that a brisk rotary motion is kept up and the prints are rapidly and effectually washed. As there is no au-

tomatic arrangement for changing the water a brisk stream must be kept up.

History of Early Photographic Experi-



ments.—Dr. Eder has recently published in tabular form a chronological list of the early discoveries relating to photography, and he promises to extend the table as his experiments progress. It is interesting to note that Vitruvius noticed the action of light on cinnabar as early as the year 1 B. C., while Schulze, who worked in 1727, is put down as the discoverer of photography. Schulze used nitrate of silver solution with which chalk had been mixed.

Photo-Relief on Gelatino-Chloride Plates.—A very rapid and simple method of making a photo-relief is described by Mr. Francis Cobb, the treasurer of the Society of Arts. He says that having given a gelatino-chloride plate an insufficient exposure, and having failed to obtain an image with the citro-oxalate of iron developer, he poured hot water upon the film, and immediately a relief appeared, showing all details of the original subject. This would have been, he says, well suited as an original for making a printing-block by moulding.

Phototypers who have occasion to make a relief by artificial light, will be able to

appreciate the importance of a method which will enable them to work with an exposure of a few seconds to a gas flame. The relief on the chloride plate may be cast from in plaster or by the electrotype method, and may even be inked up like a collogotype plate.

Treatment of Plates very much Over-exposed.—It is instructive to find how far the retarding action of a solution of bromide of potassium may counteract the effect of an exposure enormously too long, and recent experiments of Mr. Sautter, of Geneva, shows that even if a gelatino-bromide film has been exposed one hundred and eighty times as much as the correct time, a clear and vigorous negative may be obtained if the plate is allowed to remain in a ten per cent. solution of potassium bromide for one or two minutes before development is commenced. The bromide should be drained off the plate, but not washed off.

Mr. Pritchard's Account of an Algerian Studio.—Again it is my privilege to place before your readers an advanced copy of one of those admirable descriptive articles for

which Mr. Baden Pritchard is so justly celebrated. He describes a visit to the studio of Geiser in Algiers.

There are certainly two studios of first-class order in Algiers, if not more, for the capital of Algeria attracts the *élite* of Europe, and every winter a migration of fashionable and wealthy visitors sets in, swallow-like, towards this sunny seaport of the Mediterranean. From every section of Europe they come, but chiefly from France and England, some following doctors' advice to seek a milder climate, some simply following their own sweet will to escape a foggy November or drizzling February. Thus, a favorite winter resort of well-to-do people, its handsome shops, and *cafés*, and theatres flourish exceedingly, and there is little doubt that for many years to come the town will increase in wealth and importance.

The two studios to which we specially refer are those of MM. Klary et Poter and and of M. Jean Geiser. M. Klary, a name well known to our readers, has for some time quitted Algiers; but still, for his own sake, we resolved to pay his former studio a visit first of all. Unfortunately M. Poter was "tres occupé," when we presented our card, although good enough to send a message that if we called again he would be happy to see us. So we promised to call again; and when next we feel inclined for a trip of three thousand miles, and our fancy leads us Algiers-wards, we hope to become further acquainted with the studio.

In the meantime it was best, we thought, to bend our steps toward M. Geiser's establishment, and accordingly passed under the old fashioned colonnades of the Rue Babazoun to where the studio is located. M. Jean Geiser follows the example of his Parisian brethren and takes care to exhibit some pleasing pictures in various parts of the town. His show-cases are exceedingly smart and fine, and the specimens of his work are of a quality that begets confidence in the photographer forthwith. But he makes this mistake; at the studio itself the examples of portraiture he exhibits are not only less attractive, but are exhibited in a

less attractive manner. That is to say, when we entered and desired to have a portrait taken, instead of a series of choice examples being already set out for our edification, these had to be taken from certain japanned boxes. Not only are cartes and cabinets scarcely seen at their best in these circumstances, but since they get handled and shuffled over and over again, it is impossible to keep them fresh and attractive. No doubt they answer the purpose very well of patterns, but it would be far better to have them in cases or frames, where they are set out to advantage, and where there is no need to touch them. Soiled pictures discourage the customer a good deal, and although we freely admit that the specimens put into our hands were bright and fresh enough, it is impossible, in these circumstances, to keep them so. Still we prefer these japanned cases to dirty thumbled albums which many studios have on the reception-room table.

Algiers prices are Paris prices. For instance, in the studio of MM. Klary et Poter, the cost of a dozen cartes is 25 francs, and for a dozen cabinets 50 francs, panels being at the rate of 40 francs for the first copy, and 100 francs for half a dozen. M. Jean Geiser charges also 25 francs a dozen for his best cartes, which are *satinnées*, and for his cabinet pictures 30 or 50 francs according as they are plain or enamelled. But then we must admit that the work is quite equal to the best Paris work, and warmer praise it would be difficult to bestow.

We choose cabinet pictures, and are forthwith led up stairs into the studio. An assistant takes charge and demands a little more information. Would we like the portrait highly finished as in the specimen? We would. Would we like a picture with a large bold head? Certainly. Would we like to be taken in Arab costume? We would like, so we give our companion to understand, everything we can get? and, laughingly, the assistant invites entrance into a retiring room beside the studio to make our toilet.

This is a lovely little boudoir. There are soft Persian rugs on the floor, gilded

furniture, luxurious settees, rich drapery of Turkey red, and handsome mirrors. Off come coat and waistcoat, and then our friend begins to robe us magnificently in strange and complicated vestments. We are wound round the body and head with drapery and sheeting, a bead necklace is put about the neck, and a sort of yarn twisted many times around the skull. It is rather hot, and uncomfortable, and stuffy all this; but one can well afford to suffer a little, to be surrounded by such pomp and circumstance. But just another word of approval on the subject of the retiring room before we quit it; the little room was not only one of the most brilliant and elegantly appointed boudoirs we have ever seen, but its convenient position in respect to the studio enhanced its value to the visitor fourfold.

The studio is a blue studio. That is to say, its walls are blue, and it is glazed with blue glass. Of course there is plenty of light in a spot like Algiers, and therefore this little modification in the illumination is probably welcome. Moreover, a very small proportion of the studio only is glazed; it may be likened to a room with a very large window on one side, except that there is a sloping roof of ground glass just above the window, the latter rising from about six inches from the floor and being eleven feet square. There are curtains to screen the blue glass, but this is bare opposite the sitter; still, the light is not permitted to pass straight to the model. Between him and the window is a delicate screen of blue tarlatan, which seems to soften the light without apparently weakening it. This screen is simply a folding frame (like a clothes horse,) measuring 7 feet by 4 feet, with a double thickness of blue tarlatan stretched over it. Something of the same kind we have seen in Mr. Slingsby's studio in Lincoln, that gentleman employing instead of blue tarlatan, a game of fine white muslin.

M. Geiser's favorite background is one of grey cloth of alcove formation. This is about six feet high, and measures the same across. The cloth is simply nailed top and bottom to hoop-like frames of a solid char-

acter, so that it has no fastening, and is therefore perfectly smooth, where it acts as background. As we have said, the top light comes through ground glass, but a large white banner screen, measuring 30'' by 20'' is brought into requisition above the



head of the sitter. For a cabinet portrait we sat five seconds, so that the illumination was not very strong; as our dress had a great deal of white about it, no doubt M. Geiser preferred not to have a very short exposure. The camera and camera-stand were exceedingly stable, the latter being of iron.

M. Geiser himself does not make his appearance until the last moment. The assistant goes on with the work by himself until the moment actually arrives for exposure, when the principal is called. The latter, however, is not by any means disposed to take things as he found them. Although, he very quietly expresses approval, admiringly saying: "*Là pose est très bien; mais c'est très bien,*" he nevertheless proceeds to change most of the details. He both rearranges the posture and alters the lighting, taking great pains as to the pose of the head and the fall of the drapery. In a word, he not only impresses the sitter with the fact that he is doing his best, but that he is doing with heart and soul.

We are rather a troublesome model, neither patient nor steady, and albeit his words express satisfaction, we feel we are giving a world of trouble. The head will droop, no matter how firm we mean to be, and when at last M. Geiser appears to be satisfied, the wretched turban seems to be gradually but surely falling off behind.

However, all's well that ends well, and the result, it must be admitted, is an excellent one. In fact, we do not know that we have ever sat for a better picture.

"Will you be good enough to leave your name at the bureau" is the request, as we are bowed out of the studio. We descend and make our way to the office, where we find a gentleman ready to book the order. "On est prié de régler la moitié de la somme d'avance" says a neat little placard over the desk, intimating that half the amount of the order is to be deposited; but, as in our case, there might be some difficulty in forwarding the other half, we tender the whole payment at once. It is some time before the man of business can understand this, but when he does he is very anxious our name may be properly booked, so anxious indeed that he thinks it is not spelt correctly on the card we tender him, and therefore proceeds to alter a D into a T to make it conform better to his ideas of it.

The time occupied in booking, making out the account and paying, suffices amply to permit the negative being developed and allow the photographer to make sure the photograph is a good one before the visitor departs. It is a much better arrangement than keeping him waiting in the studio, for it economizes his time—which is often of value, notwithstanding many photographers' view of it—and also does away with the purposeless waiting to which sitters are unfortunately subject. Finally the plan impresses the sitter with the idea that the studio is well governed, and that the photographer knows his business. This is the lesson to be learnt from an African studio.

Production of Diapositives with Camera and Plate-holder.

CONTACT diapositives are generally made in the printing-frame in diffused daylight, but it precludes an exact timing of exposure, resulting in an absence of sharpness, more or less, no matter how much pains are

taken to ensure a complete contact. The thickness of the films alone causes a spreading of the light, and consequently weak outlines. With a thin and slow working albumen film very good results may be obtained; with albumenized collodion the results are not so good, and with gelatinobromide of silver, which is sensitive to even the weakest light penetrating from the side of the film, the results are bad.

The following manipulation is safe: The brass mounting of an objective from which the lenses have been taken is placed on the front of the camera, and this is turned towards the light, perhaps the northern sky or a piece of white cardboard. The diapositive itself is made with the plate holder. First the negative is put in, and upon this, film against film, the sensitive plate. A slow-working emulsion plate, requiring slow development, is the best. To keep the plate clear, a little more bromide such as is generally used for negatives is applied. To produce contact, a sheet of paper placed behind the sensitive plate will serve very well. The plate-holder is put into the camera, the slide drawn and the cover taken off.

The length of exposure can be controlled by drawing out the bellows more, or by applying larger or smaller stops. This arrangement brings the light all from one and the same direction, and the diapositives will be as sharp as the negative, even if there be no absolute contact.

The development is as usual, but best with old oxalate of iron, restored by exposure to light, and a little tartaric acid, to which is added a little bromide of potassium.

If the plate was not very sensitive, the exposure long and the development slow, a very clear picture of agreeable tone is obtained, which is particularly suitable for the lantern. The fixing is done with hypo. soda as customary, after which the plate is put in alum for some time to destroy the bluish tint, which originates oftentimes by reflection but disappears in the alum bath.

* Translated from *Deutsche Photographische Zeitung* by H. D.

Studies and Experiments with Gelatine Emulsion.

BY DR. EDER.

Density of the Solutions of Oxalate of Potassium in Water at 15° C.—It is oftentimes desirable to find out quickly the de-

gree of solid salts of a solution of crystallized oxalate of potassium. An ordinary ærometer of Baumé, which is to be found in almost any laboratory, will give the explanation, if the following table prepared by me for that purpose is employed:

Hemp for the Filtering of Emulsion.—

The Solution contains :

1	part	oxalate	of	potassium	to	3	of	water.
"	"	"	"	4	"			
"	"	"	"	5	"			
"	"	"	"	7	"			
"	"	"	"	10	"			

Density degrees at 15 C.

1.159
1.126
1.103
1.076
1.055

Degrees Baumé

20 degrees.
16 "
13½ "
10 "
7½ "

To remove air-bubbles, the filtering of gelatine emulsion with cotton is usually employed. It is, however, sometimes pressed so tightly together that it admits only a slow passage of the emulsion. Sheep's wool or unspun hemp or oakum will work much quicker. At present I use almost exclusively the latter, and one litre of emulsion is filtered in less than a minute.

Nitrate of Uranium Introduced into the Gelatine Emulsion.—All kinds of gelatine within my reach coagulated with this salt more or less. Two per cent. gave a thread-like matter. No advantage was gained by this addition.

Oxalate Oxide of Uranium.—Potassium as a developer for bromide of silver gelatine plates disappointed me in my expectations I based upon this as a reducer.

Oxalate of oxide of uranium (produced by exposing the mixed solutions of oxalic acid and nitrate of uranium for a month or so to light, thus forming an insoluble greenish powder,) was dissolved in a hot solution of oxalate of potassium. It forms a dark green solution of the double salt, acting as a reducer upon silver, gold and platinum salts.

Employed as a developer upon gelatinobromide of silver, it causes a very weak development of the image. Its insensibility is not only very great, but the picture is extremely thin or weak. The gelatine film is

tanned like leather; probably this tanning process explains the condition mentioned.

Red Prussiate of Potassium, destroying thoroughly all fog upon gelatine plates, makes most all the kinds of gelatine insoluble, which was not known to me several years ago, when I recommended this substance as an anti-fogging preventative. A solution of hard gelatine dissolved with red prussiate of potassium remains clear, but gives after freezing a gelatinous mass, which after reheating will not melt again, or at least with great difficulty. Once dry, the insolubility of the film is increased. This may therefore be considered as a new means for hardening gelatine.

A Mixture of Gelatine and Red Prussiate of Potassium is sensitive to light. As mentioned before, the dry mixture is almost insoluble in warm water, and swells in cold water but very little, if at all. By continuous exposure to direct sunlight yellow prussiate of potassium will form, and the exposed part will change at the same time into a bluish tint. These parts will then swell easier, and are rendered less insoluble in water (contrary to the action of the mixture of chrome salts and gelatine).

The above furnishes the basis of a new heliographic process. Its practical employment, however, cannot be utilized at present on account of its very slight sensitiveness to light.*

* Translated from *Photo. Mittheilungen* by H. D.

* The new process of Dr. Eder is analogous to the older carbon process of Poitevin, who made carbon

Action of Pre-exposure upon Gelatine Plates.—It is known that the pre-exposure upon all kinds of plates, wet as well as dry, has a favorable influence upon the increasing sensitiveness. The following experiment shows a double and triple increase.

An emulsion, produced with carbonate oxide of silver ammonia by heating for half an hour to 40° C., gave 15° Warnerke. After pre exposing such a plate for two minutes directly in front of a ruby lamp (candle-light), it gave No. 19 in the Warnerke sensitometer; after six minutes, 19 to 20° W., and after that it became foggy.

Action of Heat upon Gelatine Dry Plates.—Strong working gelatine dry plates will change their condition as soon they are heated (60 to 120° C.) My friend, Mr. J. Plener, drew my attention to this condition; the picture became much weaker; even some parts of the plates can be changed so that they will obtain no density in the developer. My repetition of the experiments confirmed this fact.

Organization of the Amateur Photographers.

THE increase in the number of amateurs in the art of photography during the past two years has been something so phenomenal as to have no parallel in the history of any other art. Four years ago, in this country at least, the amateur photographer who actually practiced his art was a curiosity, in regard to whom it is safe to say that wealth and leisure were combined in him. Few towns indeed boasted the distinction of possessing such an individual, and the general public knew as little of such a personage as of amateur surgeons. Now, however, amateurs are seen and known everywhere, and even many who are not classed among the men of elegant leisure practice the art with success and distinction.

tissue insoluble with tartaric chloride of iron exposed under a positive, by which means the parts exposed to light become soluble again and could be removed with warm water. It seems, therefore, as if all ferrid salts possess the properties of more or less rendering the gelatine insoluble.

In a word the art has become popular, and thousands of pictures are being taken outside of the profession where one was taken before. The numbers are so great and so rapidly increasing that even the vaguest sort of an estimate is impossible.

We do not mean to be understood as saying that the amateurs do or ever will do more work than the professionals, but that they go into the highways and hedges, and secure negatives that no professional would have considered profitable to take. They become, as it were, omnivorous, and seize upon everything that comes in their way, which is capable of being photographed.

With such an army of photographers seeking every view which by any possibility can be made into a picture, trying every possible experiment and working with a zeal and courage that is worthy of all commendation, it seems as though their labors should be made remunerative not only to the individual but to the public. The most feasible plan that we have been able to devise by which the work can be utilized seems to be one which practically introduces a new branch of photographic business, and which may not only make the labor of the amateur profitable to the world but of pecuniary benefit to himself.

We must remember that this is an age of illustrations, and every year brings with it an increasing use of pictures of every description, for amusement, instruction and pleasure. Indeed it would not be surprising if history should call this the beginning of the age of art. To the artist a "study," as it is called, is absolutely essential. Without studies, pictures of a high class would become well nigh impossible. To produce studies, however, requires much time and labor, and many artists are buying photographic outfits in order to enable them to obtain a certain kind of studies, which they need for various classes of their work, with ease and speed. Until the advent of instantaneous photography certain subjects were rarely attempted, save by specially favored artists, or those who were unusually gifted by nature with quick and accurate perceptions.

The representation of animals and men in motion was so difficult that the artists capable of doing it successfully have in the past achieved world wide reputation. The artist in search of "studies" has penetrated every corner of the known world, and months are spent searching for subjects to make studies of.

In addition to the artists there is an immense army of illustrators in every field of science and literature, who are searching for subjects for pictures as a part of the art of book or newspaper making. To them nothing comes amiss in one form or another. They use everything that is capable of being represented graphically.

Until very recently, the taking of an instantaneous picture was not a work to be undertaken without a great deal of preparation, and so much apparatus, that few except the most courageous amateurs dare face the inevitable crowd, which in all public places attended the artist, without at least one assistant. A picture in a crowded street, a workshop in any busy corner where interesting subjects were to be found, was as impossible as to set up an instrument in the centre of Broadway upon a week day. The instantaneous photograph is of course the only means by which we can represent people in their ordinary avocations, as they are, and furnish just such illustrations as are wanted. We must be able without attracting undue attention, without distracting the subjects of our picture from their work and without a great amount of apparatus, seize them on the wing, as it were, and transfer them to our sensitive plate.

No one who has not attempted to fix a camera for an instantaneous picture can realize the amount of preparation which is needed, and the labor and care involved in the use of the ordinary apparatus; and if this were all that could be depended upon, we could hardly expect the amateur to be able to do much in the way of recording the flying phases of the most rapid action.

The Detective Camera, however, has practically revolutionized the taking of instantaneous pictures. This small sized, complete, portable instrument, with the still

more complete methods of controlling the exposure, is what its name denotes, a Detective Camera, capable of being used in almost any situation. It is so compact that it may be taken under the arm and a lady might without attracting any attention go upon Broadway, and take a series of photographs, feeling perfectly sure that she would attract no more attention than she would if she carried a work-box or work-basket. With such an instrument, all fields are open to the amateur. His apparatus can go with him wherever he can carry it, and whenever there is sufficient light for work he is enabled to seize his subjects at the very best moment and secure effects which are utterly beyond the reach of one who has to travel with a more elaborate apparatus. So great do we consider the possibility of photography by the use of the Detective Camera, that we feel justified in saying that it will mark an epoch not only in amateur, but in professional photography also.

Suppose now that at some central point an exchange or business agency be established where the army of amateurs can send prints from their negatives, and place them on sale. Here, classified, catalogued and ready for reference they would be accessible to the artist, the author, the illustrator, the designer, the teacher and in fact by all classes of people who desire studies. It would form a library of artistic information whose value it is difficult to form a conception of in advance of its establishment. Not only would the work of the amateur be made practically useful with such an organized centre, but it would receive a new stimulus. Instead of taking subjects at random here and there, as caprice or fancy dictates, subjects would be opened to him from which he would select his work according to his tastes, opportunities and apparatus. Thus an amateur living abroad or among a peculiarly interesting or little known people might take up the subject of their dress, arms, or implements, or might choose groups of the people, and portraits of typical faces; while boats, or vessels and their details would form subjects of interest both at home and abroad. Classified sub-

jects of this kind would give an opportunity for a double work, since each might be treated from both the artistic and utilitarian standpoint. One set of subjects which would naturally come to the amateur at home or abroad, and which would be of the highest value, would be illustrations of the different manufactures in all their branches. Thus commencing with the raw materials we might have photographs illustrating the process, machinery, half finished products, workmen, buildings and their surroundings, and finally the finished products; and in some cases pictures of the bales and packages ready for shipment.

A set of photographs of this kind would be a perfect epitome of manufacturing operations, the value of which in itself considered can hardly be overestimated. Such a series of photographs, illustrating iron ship-building, work of the lumbermen, the progress of a great building and a thousand other things would, if accompanied by suitable record, be exceedingly useful.

But it is out of place here to go into the details of such a scheme or attempt to elaborate an organization. The idea is certainly capable of being worked out on a great scale. Practically it is a reproduction of the whole world on a grand scale, which by one of those common paradoxes is a reproduction in miniature.

Report of the Photographic Section of the Amer. Institute.

NEW YORK, April 1, 1884.

PRES. NEWTON in the chair.

MR. MASON. I have received the last number of ANTHONY'S BULLETIN and a communication from the British Society of Photographers containing a printed list of its members.

MR. GARDNER. Mr. Chairman, the Executive Committee have to report as the programme for this evening, a paper by Mr. J. F. Coonley on the Elements of Art in Photography, followed by ten minute speeches by members and invited guests. The programme for the next meeting is not

fully agreed upon, and we shall have to wait until the notices are published.

The Element of Art in Connection with Photography.

The chief use of retrospect is to recall some incident or fact that may be entertaining or worth recording. Every person who has been engaged in making pictures by the photographic method long enough to be termed a veteran, will recollect that it is not so very many years since it was the accepted theory that nearly all there was in this process was centered in the dark room, and lay almost entirely in the hands and brain of the operator. In those days, in most instances, he was also the positionist, and nearly all his supposed failures or successes were produced by his skill on the one hand, or its absence on the other, in the chemical or dark-room manipulations. But with the lapse of time and the changes which have taken place, it became apparent that there was another element to be taken into consideration in the production of pictures by this process, besides chemical knowledge and skillful manipulation. The secrets of the dark room are not so mysterious as they were, but are just as requisite and essential as ever, and perhaps more so, for without careful and skillful manipulation combined with good judgment no really fine photograph can be shown. There is an element in this process which has not kept pace (except in rare instances), with the other requirements. This is the element which must be a part of every picture to entitle it to be recognized as a picture, as we understand the term—an ideal of something which leaves room for the imagination to play and build upon, and does not show all there is in it at a glance; not one to call forth only a momentary interest, but one that attracts and tempts us to look at it again and again to see some new or hidden beauty we did not at first discover. Such productions are in every sense pictures, and are incentives to thought, study and greater effort. They are works of art, and the person producing them has the elements of the artist in his nature, though he

may be circumscribed in his method of producing effects.

In looking over the great number of photographs that we see in such profusion, if we examine them critically we are forced to the conclusion that far the greater part of them were made by persons who have very little taste or education in the direction of art, and if the same tests were applied to them that pictures in an art exhibition are subjected to, but few would pass the ordeal without being terribly scarified. The same defects are apparent whether they are portraits or out-door views from nature. The most of them will be found wanting in one or more particulars, and not what they might have been if made by some one with more taste or cultivation in securing picturesque effects. This talent, or whatever you may choose to call it, is a natural gift born with the individual possessing it, and is capable of being developed to an extent often arriving at a degree of excellence so that anything it comes in contact with of this nature not in harmony with its ideas or feelings causes as palpable a discord to the feelings of its possessor as does a false note in music to the ear of an accomplished musician.

Pictures of all kinds, no matter how made or by whom produced, are a combination of effects, and the more harmonious and brilliant these effects can be produced, the nearer they approach nature and the ideal of the true artist. Without these characteristics they partake less of the artistic, and more of the mechanical. Comparatively few of the great army of men engaged in photography ever attain a name or celebrity beyond a limited circle or local reputation. The great world beyond or outside never hears of them or knows that they have being. Those who do make their mark and become famous will be found in every instance to be men who have a natural talent in the direction of art, and in many instances have devoted years of their lives as professional artists in some of its various forms before they embarked in photography. The school they have thus passed through has admirably fitted them to assume and

take position in its foremost ranks. They may be young in the business, but their natural gifts in art studies, and their former associations in this direction has enabled them to assume prominence by the superior quality of their works, and their names are household words in many lands. Looking at the subject from this standpoint, we would think that there were too many men engaged in making photographs, and many that have mistaken their avocation who, if they had tried, could perhaps have done something else much better. If there were fewer in number and only the fittest remained, I believe we would soon become familiar with more really fine and meritorious pictures by this beautiful process, and the world at large would be aided and cultivated to a critical appreciation of what constitutes a really good picture, and not be so easily imposed upon. At present there seems to be no guide or standard of excellence. Each is a law unto himself. Hard times, excessive competition and other causes, compel many men engaged in photography to do things contrary to their knowledge of right or correct taste, and to toady to the whim or caprice of some shoddy patron in order to retain the patronage of which they so sadly stand in need. This is perhaps excusable under the circumstances, but the result is the same. It creates a want of confidence, and they are soon subjected to the dictation of every patron who chooses to use the power he possesses, and the artist becomes a mere machine to carry out others' ideas or notions, be they good, bad, or ridiculous; usually the latter.

As far back as my recollections extend photographically, it was said that one of its missions was to aid in the cultivation of a more refined and critical taste in all things pertaining to art. In these latter days, however, it seems to have degenerated in too many cases until the principal object appears to be on the one hand to secure as much money as possible with the least trouble, and on the other as many pictures as possible for the smallest outlay and without much regard to quality. None of the elements of art are considered there.

The retouching of negatives, as extensively practiced in many places, is very detrimental to every artistic requirement of a picture. To obliterate all lines and characteristics of an individual and leave a surface as smooth as lead will make it, a surface that has no resemblance to flesh in many cases, and usually done by persons who know very little of the anatomy of the human face, is carrying the species of *black art* to the very verge of absurdity. It would be just as consistent to obliterate all the lines and fill up the seams and wrinkles in the bark of a gnarled and picturesque old tree, or smooth and fill up the rough places in a rugged, weather-beaten rock which forms the principal objects in the foreground of a landscape, as to cut away all the lines and polish up a wrinkled old face until it looks like an ivory ball.

In speaking of art in connection with photography, a recent writer asks this question: "Has the photographer any right to call his productions works of art?" This leads to another question. What are the essential conditions of art? In considering this question let it be observed: 1st. Art does not depend on the medium of production, but on the results obtained. 2nd. Art may consist in different degrees of completeness. 3rd. Skilled manipulation does not constitute art. But the fact still remains that there is a correct standard of art, which can only be correctly applied by him who possesses, and just in proportion as he possesses, the art faculty. From this we naturally conclude, when looking at the finest productions in photography, that some person made them who had this art faculty well developed and was possessed with more ideality and taste in producing effects than is found in the majority of men in our profession. There is no doubt that the chemical and mechanical part of photography is far in advance of its artistic requirements, and that there is a necessity for the latter to be more thoroughly cultivated by taking advantage of all improved methods and appliances and combining the different elements, artistic, chemical and mechanical. Then it will be the crown-

ing glory of the *artist* in photography to see his efforts assume the high standard of excellence they are capable of demonstrating, and have that harmony, feeling and balance in every part which constitutes the perfect picture. But to reach this altitude it must ever be borne in mind that certain rules in art should never be lost sight of, by all who have this faculty or ability developed; and when they materially deviate from it, they are prostituting the talent nature endowed them with. Those not in possession of this gift or faculty find it a difficult and hard task, and seldom arrive at any great eminence or distinction in the undertaking; and when they do have an occasional success, it is often arrived at by that method which in music is termed "an accidental." They know not how or why they produced the effects they see before them, and may not be able to do so again in a long time. One of the greatest incentives to excellence in the direction of art photography would be a public demand for better work; but as long as the public do not recognize the difference, there will be no great demand for anything of a higher order than they are now receiving, and the remedy for this is, perhaps, a task of such Herculean dimensions that no man, or combination of men, having the requisite qualifications will feel like undertaking; that is, of trying to educate the public so that it can understand and appreciate a higher and better quality of picture, and to demand that this branch of art shall be carried to the utmost point of excellence to which it is capable of being advanced.

Until that time arrives the cheap Johns will rule the situation and carry off the spoils. "The stream will not rise higher than its fountain or head." But, if the fountain or head of photography were sufficiently elevated, the demand for better pictures would increase correspondingly. Persons educated to discriminate, and who have the knowledge necessary to judge critically of the merits of a picture, are satisfied only with the best; and if the majority were so educated, those who made the best, in all respects, would soon find enough to do

to test their capacity to its utmost. In the artistic department is where the advancement must take place in photography. There is plenty of room to develop and expand in that direction, and wherever this has kept pace with the other appliances, there is where the finest productions are shown.

There may be a doubt as to how far public taste influences the attainments of the artist, or his individual excellence; and therefore it is doubtful if false criticism injures him. A genuine artist will perceive too readily the shallowness and impertinence of ignorant criticism to be led by it to the injury of his work. But the artist is not all in the matter. He may labor for himself and his own intellectual perfection; but if he does not reach the public, his work is without any result, and his highest importance is to his own times. So are his life and labor in great part wasted, if the taste of the public shall be so vitiated as to misunderstand or overlook him. The cultivation of taste is not so easy a thing that it may be effected carelessly; nor has taste itself so much vigor that it can resist false influences and always remain correct in spite of sophisms and prejudices. There seems to be but one way to correct this state of things—the general education of the public in the principles of art. This must necessarily be the work of years. The humble, reverent student of nature is alone fit to become the teacher in art. But let us, in being taught, not forget that we see nature through art, never letting our vision rest satisfied with the work of the artist until we have learned to see its prototype in nature. Let not the priest stand for the religion. That which art points out to us is not our own until we have confirmed the indication by our own observations. Before that, it is information; afterwards, knowledge.

Mr. BOGARDUS. I do not feel that I can add anything to the paper. I have long felt that photography is getting to be more mechanical than artistic, and I am glad to hear such an explanation of the art matter as we have heard to night. The great trouble I find in making artistic pic-

tures is, that sitters will not let me make pictures as I wish. When a very stiff sitter comes and holds her hands thus (illustrating), and says she does not want her picture to look stiff, the best way to do is to let her keep her hands behind her. Some one comes in with a crooked mouth, and says that she has had her picture taken by Sarony, Kurtz or Gurney, and they all made her mouth crooked. I suggest taking the back of her head. In carrying out the art matters we must have a sitter as well as an operator. I have no trouble with thousands of people who are graceful and pose themselves. One of the best pictures I ever made was of a man who certainly weighed over two hundred pounds. I told him to stand just as he did at home, and I made a very successful picture of him. It requires great judgment and care to adapt the position of every sitter to himself. It will not do to give a plain old lady a tragical position; but you must adapt your artistic ideas to every person. Almost every one who comes in has something peculiar to himself; and what is natural to one may be awkward to another.

Mr. GARDNER. I would like to have Mr. McSpedon tell us something of his experience.

Mr. MCSPEDON. I don't know that I can say anything of interest in the midst of such a company who are so advanced in the art. I have been connected with some of the illustrated newspapers in New York for several years, and have been travelling in the West. Last summer I was connected with Frank Leslie's illustrated paper; and perhaps it would be interesting to many of you to know how I produced many of my sketches, which were supposed to be pen and ink sketches. Everywhere I went I would go directly to the photographer of the town, to get interesting points, and through him I gained a better and a readier means for illustrating my articles. I am convinced that very soon the travelling artist and correspondent will have very little to do. It will be the travelling photographer and correspondent.

At Sante Fé, New Mexico, I met Mr.

Whittick, a man who has quite a reputation as an Indian scout as well as a photographer. He is working in the interests of the Ethnological Society in Washington, and has accomplished his work by most arduous labor. He has been among all the Indian tribes, and is handing down to future generations the whole history of the Indian country and peculiarities of the West. He will come to Washington soon, and will probably bring some of his work with him.

While I was in the Northwest I thought I would learn photography, and worked with a young man who had been a farmer. Mr. Bogardus speaks of the difficulty in setting a person, and their peculiarities. We had a great many people there who would come in and fix their hair in a very peculiar way, and then blame us for not taking them differently. We had to put up a notice that we were not responsible for the manner in which the hair was arranged. Sometimes most outlandish-looking people from the backwoods would come. Women were generally attired in a plain black dress. We overcame the rigid positions by simply taking a bust picture.

I then went to Stillwater and worked with Mr. Loomis, who now has a most beautiful studio. They make a great deal of money in the West, and do very well indeed.

I wish to say I feel my own lack of usefulness since photography has become so universal. Through photography the best paintings can be transferred upon wood, and those who have not been able to see the originals have a chance to see them reproduced in black and white in our magazines and papers.

The PRESIDENT. I studied art before I did photography, fortunately or unfortunately, as the case may be. In photography three things are essential. A plate that is sensitive and in proper chemical condition; next, proper exposure, and next, proper development. That will produce a photograph. Art may have nothing whatever to do with it so far. It may be all chemical and mechanical.

If you want a picture, you must know

something of art. If you succeed without a knowledge of art, it will be something that may not happen once in a thousand times. Amateurs who desire to engage in landscape photography should study art, so so as to know a picture when they see it. I have been out with photographers (so called) who could not tell a good picture.

I used to sketch and paint, and had quite a reputation as an amateur artist, and concluded that I would photograph my views. I went to Professor Seeley, and told him to prepare what I wanted so that I could make photographs of landscapes. He brought up to my house a great box—about as much as a healthy mule could get round with—and sent his boy to make some dry plates for me. He made me a lot of the old tannin dry plates of 14 x 17 inches for a young man like me to start with. I took one on the roof and exposed it seventy minutes. When I developed it, I found it was about half exposed. That was in the infancy of dry plate photography. In making pictures you must know something about art. You must know when your picture is lighted, especially if it is a portrait; from the high lights to the deep shadows, a perfect gradation. If it is not properly lighted it will strike the eye of an artist at once. In making landscape photographs art is a great help. It brings the Rocky Mountains and the Yosemite Valley before us; but we do not know whether we have seen artistic pictures of them or not.

Take the great picture of the Yosemite Valley painted by Bierstadt. No photographer who has ever been there would know it.

Mr. MASON. The Chairman has spoken of art in its application to landscapes. I think it is a strong point. The three things essential for the production of a picture—a plate, camera and chemicals—would produce a picture with proper management. Canvas, brush and paints do not make an artist; and probably there is no person in this room conversant with art, as it is termed, in New York who has not seen many poor, miserable pictures by men who claim to be artists. Now the question is, are they entitled to be

called artists? I have seen some of our art journals illustrated with pictures so miserable that if a photographer did it he would be laughed at. If he selects a point of view which is really fine, and selects a time of day suited to the best illumination of that scene and produces a fine picture; is not that art? Is it less entitled to the name of art than the man's sketches? I read in some paper that photographers were not artists; they were merely machines. We have seen when Mr. Kurtz and Mr. Rockwood were present at our meetings they used appliances which might be termed mechanical; they are only machines. One may use these intelligently, or he may use them without any artistic conception. I have had members of the Natural Academy of Design come to me with their work at night, and work with me the next day, and then carry it away again at night so that no one would know that photography had anything to do with it. I believe we shall soon see the day when photographers will be recognized as artists, if they merit the name of such.

Mr. GARDNER. I can remember the time when the photographer was his own chemist, and his own mechanic, and sometimes he was obliged to make nearly all his apparatus with his own hands. That day has passed, and now only the most expert in the several branches of manufacture will satisfy the intelligent and successful photographer, who performs his work in a manner to meet the approbation of the people who are his patrons. I can remember when there were some men in the business who had great mechanical ability. They were constantly devising mechanical contrivances and appliances to the art, receiving patents on them, and became noted not only in this country but in Europe. I have known men who were expert in the chemical department, but had no mechanical ingenuity. So the work is divided, and art is the manifestation of these abilities.

It is not the artist alone who can be a successful photographer, neither the chemist, nor is it the mechanic simply who can perform such work as well, give satisfaction.

Photography has divided itself into three separate divisions. There is as much cultivation of the eye in chemistry as there is in art. There are certain changes that take place in chemistry that only long experience and observation will detect. I have seen different men take the same chemicals in one room and produce entirely different results. When the artist sees his subject he has something in his mind that he must produce, whereas he who has no cultivated eye can see nothing. He takes anything that comes, without regard to artistic effects. It often happens, too, that the man who takes great pleasure in the study of art has no pleasure whatever in the study of chemistry. I have noticed men who were experts in chemistry who had no desire to study art, and on the other hand those who were expert artists had very little desire to study or practice chemistry. These are separate forces and must be combined in order to satisfy the public fully. Photography is only an assistant to high art. We cannot expect from photography alone all that it is capable of producing. But when photography is used in connection with other branches of art it becomes useful in a great variety of forms. It is impossible to tell the extent of its power in the future. I should advise a pupil to consult his own aptitude for art, or for chemistry, or mechanics. There is room for all in each of these branches, and if one is expert in either of them, he may go into photography, and with the aid of the other two be successful.

The PRESIDENT. I have made a developer for quick work, and I have given it to quite a number of photographers who have had good success with it. Mr Roche said he would be here to night and bring some negatives with him made with it, but he has not arrived. I have brought a negative to show you.

This developer for rapid work is fifteen grains carbonate of soda, fifteen grains carbonate of potash, fifteen grains sulphite of soda, and one ounce of water. Use two and one half grains of p. ro. to the ounce. You will get such a negative as I show

you here. That of the swan was taken in Central Park, in not more than half clear sunlight, with a drop shutter, the third stop and 13-inch lens. Two out of the four I made were good. The negatives made with this developer are more like wet plate ones than any I have seen. You do not need the full strength for ordinary gallery work; I would not recommend more than half, or even quarter the strength would make a good developer.

Perhaps I ought to say something about the mercurial accelerator that I gave to the public some time ago, on account of the fact that it has been commented on by the photographic journals. There are hardly two who get the same results with it.

You can give any formula to a dozen men, and not two will get the same result. As a rule, when a formula is given to the public it is not followed.

In using this a great deal depends upon the iodide of potassium being in excess. I never use it except when I have a plate that is very much under-exposed. The iodide of potassium must be sufficiently in excess to prevent any reaction when added to the developer. Should any reaction take place, add more of the iodide until that ceases.

Q. Who was the maker of the plates?

The PRESIDENT. I used several different kinds.

Q. What do you mean by quarter strength?

The PRESIDENT. I make it up in this way: In one quart of water I dissolve three and a quarter ounces of carbonate of potash and three and a quarter ounces of carbonate of soda, granulated. In another quart of water I dissolve three and a quarter ounces of sulphite of soda. Then take three ounces of each of the above stock solutions and add six ounces of water; then the solution will contain twelve grains each of the above ingredients to the ounce. When used add two grains and a half of dry pyro. to the ounce. If required weaker take less pyro. in proportion.

Q. I would like to inquire if any gentleman can give me any assistance in mounting

pictures on thin cardboard, without curling.

Mr. GARDNER. If the object is simply to paste the pictures on a thin substance, substitute linen for paper and there will be no curling whatever. It is necessary to paste albumenized paper on both sides. You can form a very nice album by allowing a small portion of the linen cloth to extend beyond the picture. Have the same grain of the paper on both sides. I have a number of pictures that are perfectly straight and ready to mount in a book, with a simple thickness of the linen cloth and two pieces of albumen paper.

Mr. MASON. Prints may be mounted on plain paper or thin cardboard, and remain flat by pasting them with starch or any simple adhesive substance, before they are trimmed. Let them dry; then trim and place them between sheets of moistened paper. Sprinkle three or four sheets, pile them up, lay the paper over it with pressure, and let it lie for some hours until the moisture is distributed evenly. Pile the prints in this way until they adhere, and then lay them on the light cardboard and press them. In regard to the two pieces of paper on the opposite side, it is better to be careful to have the paper even in the same way.

I intended to say something in regard to publications. I, and probably all of the gentlemen connected with photography for a number of years, have recently met with quite a number of curious re-inventions, which have been called new, and may be found in the journals published fifteen or twenty years ago. Mr. Newton gives this developer; and in relation to developers a medical gentleman discovered a most wonderful developer with which he was producing effects it was impossible to make with any other. I found out that it was the carbonate of soda developer Mr. Newton published two or three years ago. That gentleman was looked upon as a perfect wonder, being an amateur, and having discovered something beyond the reach of the professional. I told him I could furnish proof that this was discovered three or four

years ago, and published both in America and in Europe. I expected to see here to-night a gentleman who called on me about a year ago in search of some information in regard to a glass house. He had applied for a patent, and had been referred to an invention brought out in England some years ago. We learned from Mr. Bogardus at one of our meetings here that just the same kind of a building was used here twenty-five or thirty years ago. Men should keep posted on what is being done by others.

I remember some years ago a camera with a revolving front was patented. I became somewhat interested in it, because to me it was a novelty. When I came home I looked through my library to see what had been done, and found that only three years ago the Patent Office had issued a patent for identically the same thing to two men, one in Massachusetts and one in Illinois.

We had brought before us about five years ago a plan for the improvement of negatives, by putting on the back of the negative translucent paper. Last summer I was using this in my studio; and a gentleman who saw it asked me about it. I told him I had been using it three or four years, and had permission from the inventor. He said he had used it in California twenty years ago. He did not know whether it had ever appeared in print; but there was no secret about it; they used it there as they use any other device.

A few months ago a gentleman came to my studio who was getting out a new varnish, which had the wonderful property of drying as quickly as water, and would dry the plate and leave it all ready to print, thus saving time and expense. I learned afterwards that it was merely a mixture of albumen in some ammonia and water—something known for ten or fifteen years. A great many amateurs buy it, and pay a good price for it, when for a few cents they could make the same thing.

The fuming of paper with ammonia is another thing for which we have had several claimants, and the last one that I find

given by anyone is in 1861, or '62. I find that a journal described it as it is used now. I believe that Mr. Campbell, of Jersey City, is the inventor of this. A few days ago I was doing some business for Mr. Murphy, a gentleman who used to work with photographic apparatus. We were discussing photographic matters, and he showed me a plate-holder which he had patented more than twenty years ago. The same plate-holder has been advertised as a new thing, illustrations published, and a great deal said about it. Two different men have claimed it, and no difference can be detected in a single part. I merely speak of these to show that it is absolutely necessary for a man who seeks to keep up with the times to read the photographic journals of the day.

Mr. BOGARDUS—History repeats itself. My friend Taylor will bear me out in what I say. A few weeks ago we had here a box in which dust was put, and the spreading dust was used in making a picture. I recollect thirty-five years ago, when daguerreotypes were made, we had an instrument almost the same.

Now we use a burnisher to give a gloss to the picture; then we wanted to get the gloss off the daguerreotype. A little box was invented in which you put ultramarine blue, purple and different colors, and cut out paper as nearly as possible the size of a man's face; then loading with weights to keep it down and putting it in the box, after stirring up the colors and leaving it awhile, the luster was destroyed.

Mr. GARDNER. I published some time ago a method of using a water varnish. I take a twenty-ounce bottle that will hold boiling water, and dissolve two ounces of white shellac in three ounces of alcohol. I then put in the twenty-ounce bottle boiling water to about fifteen ounces. I immediately add two ounces of liquid ammonia, and finally the dissolved shellac in the alcohol; then let it stand perfectly still until it becomes cool. It lacks the color of spirit varnish, and in some respects is superior to it. It does not lower the tone of the picture. When you look at the nega-

tive you would hardly know the surface had been varnished. As soon as the negative is fixed and washed, pour the varnish over it. The first time you pour it over it takes the water out. After the second coating set it up to dry. It dries more quickly than water. I have used it constantly for nine years.

Mr. MASON. I think these are remarkable negatives Mr. Newton has showed us. And the pictures are works of art.

Mr. NEWTON. I brought these merely to show the results of this developer. In selecting a position I chose the one which would give me a good picture. Five or six years ago I made a series of experiments with carbonate of potash as well as soda, and decided upon the use of carbonate of soda because it was more easily obtained, less corrosive, less costly, and gave stronger negatives with less pyro. (I brought the element of economy in whenever possible). When the ferrous oxalate first appeared, brought out by Mr. Willis, the inventor, it was in the crudest form, and he asked me to work it out. He had left the manuscript of it with the editor of the *British Journal of Photography* in London. At that time a pound of oxalate of potash cost \$2 50. I experimented, and found that salts of tartar cost but fifteen cents a pound. After experimenting I succeeded in presenting it to the public in substantially its present form. With the soda developer I can develop two plates, one having been exposed two seconds and the other thirty, and produce equally good negatives from each, so that no one could tell which had the longer or shorter exposure.

Mr. MASON. Although Mr. Newton has told us to use carbonate of soda crystals, yet he has also said it contained 64 per cent. of water. I know several gentlemen who use this carbonate of soda developer. The granulated soda is not kept by grocers.*

A vote of thanks was given to Mr. Coonley for his interesting and instructive paper. Meeting adjourned.

O. G. MASON, Sec'y.

* E. & H. T. Anthony & Co. have a large supply of superior quality.

Rochester Photographic Association.

STILL another report comes to us for publication from this active and intelligent body of workers. They are all good enough to keep; and we again ask a little more indulgence for want of space. Look for them in our next.

Association of Operative Photographers of New York.

{ NO. 392 BOWERY.
NEW YORK, April 2, 1884.

PRESIDENT ATWOOD in the chair.

PRES. ATWOOD. There is no regular subject for discussion to night, but I believe Mr. Jahr is to give us some ideas upon lighting the dark room.

Mr. JAHR. Nobody has been more surprised than myself on reading a few days ago that I was to deliver a paper on this subject. I have none, and if you wish me to read a paper that is carefully prepared I would ask you to postpone the whole matter for another month.

Mr. ROCHE. Here are two pictures made yesterday—a very cloudy day—I developed in a light by which you could read a newspaper. Take a ruby light, an orange light or cathedral green, ruby, dark orange, two thicknesses of these glasses, and I will guarantee to make a transparency through them. Any kerosene lamp with a two-inch wick will do.

This is a developer in which all the alkalines are combined, Dr. Eder's, Dr. Vogel's and all. The best glass I have found is a very dark orange; it is better than ruby.* Here are proofs, developed with what I call the combination developer. One picture I obtained was perfectly yellow; by putting in some bromide the other came out quite clear.

Mr. JAHR. Mr. Roché, will you kindly give us the formula for this developer. To make a negative of a yellowish gray color our common developer does not do it quickly.

* If any one desires, we can supply this glass.—E. & H. T. A. & Co.

Mr. ROCHE. Here is the formula :

No. 1.

Water, 30 ounces.
Pyro, 90 grains.
Oxalic Acid, 10 "

No. 2.

Water, 20 ounces.
Pure carbonate of potash, 600 grains.
Crys. carbonate of soda, . 400 grains.
Sulphite of soda, 100 grains.*
Liquid ammonia, ½ ounce.
Bromide of ammonium, . . 10 grains.

For a 6½ x 8½ plate I take three ounces of No. 1 and add one ounce of No. 2, or more, if required. Without bromide you will not get a clear plate.

Mr. JAHR. Mr. Roche tells us to develop with pyro. and sulphite of soda. If we put citric acid in the developer, to a certain extent the alkali will be neutralized.

The normal sulphite of soda is alkaline, and therefore contains a certain amount of carbonate of soda. When you put together pyro. and sulphite of soda, which is in an alkaline state, it only means that you have pyro. and carbonate of soda to develop with. All alkaline pyro. solutions will develop gelatino-bromide plates.

Mr. BUHLER. I wish to say it is only very lately that I tried the carbonate of potash and sulphite of soda. I cannot get rid of this peculiar yellowish green color. If there is any one here who could give me a formula to get rid of that stain, I would be glad to hear it.

Mr. ROCHE. One ounce of alum, half an ounce of citric acid, twenty ounces of water. Take the plate after developing, washing and fixing, and put it in this solution; then leave it in about half a minute or so, and the whole of the stain will disappear.

Mr. ATWOOD. Here are two pictures made by Mr. O'Neill. The picture of the young lady was made on a Seed plate; that of the child was made on an Eastman plate.

This is the formula Mr. O'Neill uses in developing.

No. 1. 32 ounces water, 90 grains pyro, 45 grains bromide of potassium, 12 drops nitric acid.

No. 2. 32 ounces water, 2½ drams strongest ammonia. Take two ounces of No. 1 to one ounce of No. 2, gradually increasing the latter, if necessary.

Adjourned.

The Society of the Amateur Photographers of New York

THE second meeting of the Society was held Tuesday evening, April 8, at No. 1321 Broadway, Mr. F. C. Beach occupying the chair, and Mr. Partridge being at the Secretary's desk.

The minutes of the previous meeting were read and adopted, and a committee of three appointed to nominate officers, who reported the following :

President, Mr. F. C. BEACH.
Vice-President, Mr. W. H. GILDER.
Secretary, Mr. W. E. PARTRIDGE.
Treasurer, Mr. G. S. RICH.

Executive Committee.

Mr. H. NEEDHAM.
Mr. W. H. BARTHOLOMEW.
Mr. GEO. H. RIPLEY.

Committee of Arrangements.

Mr. G. A. ROBERTSON,
Mr. J. F. APGAR.
Mr. C. W. HULL.

Mr. Partridge felt compelled to decline to take the Secretaryship owing to business arrangements which would interfere; and on motion the name of Mr. C. W. Canfield was substituted for this office, and the report of the Committee was then adopted. The Secretary was directed by vote of the Society to deposit a ballot for the officers nominated. This was done and they were declared elected.

Mr. BEACH then demonstrated the printing capacity of the bromo-gelatine paper as previously described.

* We have the finest samples of crystallized carbonate of soda, carbonate of potash and sulphite of soda of any in market.—E. & H. T. ANTHONY & Co.

Mr. NEWTON gave an interesting talk on the subject of developers, for "instantaneous" work particularly, and gave his formula, published elsewhere.

After some discussion of the best light for the dark room, and relation of minor experiences, a vote of thanks was passed to Mr. C. W. Canfield for the use of the room in which the meeting was held.

Mr. WALKER offered to bear the expense of printing the Constitution and By-laws.

A vote of thanks to Mr. Walker for his kind offer was unanimously passed.

The meeting then adjourned to the 2nd Tuesday of May.

Chicago Photographic Association.

THE regular meeting was held April 2, the report of which is at hand—we wish it were more legible—but nothing of any great importance transpired.

The subject for discussion, *Electric Light Portraiture*, was unavoidably deferred till the next meeting, when it was hoped through the courtesy of the Van De Poole Electric Light Co., an opportunity would be afforded by them to use their premises instead of the society rooms for that purpose.

Mr. GENTILE invited the members to attend the next meeting of the State of Illinois Photographers' Association, as the subject of the Benevolent or Life Insurance Fund would be brought up.

A general talk ensued on the possibilities of dry plate development, in which many participated, but nothing of moment was elicited.

There being no further business, the meeting adjourned to the adjoining room, where Mr. Douglass had on exhibition Anthony's enlarging lantern. This was admitted to be a very convenient and ingenious arrangement for the purpose, while its price is very reasonable. Owing, however, to the insufficient notice of this feature in the evening's entertainment, there were not available any negatives of suitable size and quality to fairly test its capabilities. The Secretary would suggest to the makers that it would be an

improvement to make the negative slide so that it would carry a 5 x 8 negative and any smaller size, whereas this specimen would not take even a 5 x 4 without cutting. Another needed improvement is the substitution of a good argand burner for the flat flame "Leader" actually used.*

Personal.

HERR HUENERJAEGER, a worthy gentleman more than eighty years old, a pupil of Daguerre, and in all probability the oldest photographer living, is now in indigent circumstances. Restlessly following his profession in various parts of the world, and having experienced many changes of fortune, he a few years ago resolved to return to his fatherland. Being shipwrecked on the voyage homeward he lost his all, and reached his destination a poor man. The old gentleman has since tried to make a living by working in one of the *ateliers* of his native town, Brunswick. His advanced age and enfeebled health make that impossible now. The city councils of Brunswick and a few colleagues have assisted him to a limited extent, and the Society for the Cultivation of Photography have aided him with a present of 100 marks, but not enough has been contributed for him to live upon. He deserves and is worthy of our sympathy. Herr A. Sternitzky, of Brunswick, and the publishers of this journal will receive contributions, for which proper acknowledgement will be made.

We shall be very happy to receive donations and transmit them to the *Deutsche Photographen Zeitung*.

E. & H. T. ANTHONY & Co.,
591 Broadway, N. Y.

WE have just received a fresh lot of the superior N. P. A. Extra Brilliant Pensé albumenized paper. It will go off rapidly.

* Mr. Roche, thanking the gentleman for his kindly suggestion, would state that the slide can be cut to hold a negative up to 6 x 8 inches. For negatives of smaller size, by placing a plain glass in the opening, he can then lay a negative of *any smaller size*, and hold it in position by the clip.



THE PHOTOGRAPHERS' ASSOCIATION OF AMERICA.

TO THE PHOTOGRAPHERS OF AMERICA:

THERE has been so little said in the Journals, and so little disturbance made during the past few months of 1884, that possibly there may be some of you who need to be reminded that the time is fast approaching for the greatest and best Convention and Exhibit of photography ever held in this country. There is not the least doubt but the Cincinnati meeting will in many ways be more profitable and interesting than any this or any other society has ever held; and it is really difficult to see how any of you who have progress written on your escutcheons can afford to stay away from this meeting. What with the wonderfully rapid strides that have been made in the art during the past year or two, and the added stimulus given by the liberal offer of prizes by our leading dry plate manufacturers, some remarkable achievements will be shown in photography. Of course, every photographer should go and be benefitted by the opportunity; and also, of course, every one should take along with

him some sample of his work, the best he can make. By the way, you don't know what a fine display you can make until you try. Get at it, then, by all means; and if you don't succeed to your entire satisfaction, be sure that that is a hopeful sign, as it will leave you some chance for improvement, after you have studied carefully the successes and failures of others.

At all events, hurrah for Cincinnati and a good time! There is a possibility that the photographers may be more successful in taking the city than were the rioters during their late attempt in that direction. Oh! I came near forgetting to remind you all that the treasury possesses still further capacity, and Treasurer Armstrong stands smiling and ready to acknowledge the receipt of dues and subscriptions from those who may have deferred the pleasure of settling up until now. Music Hall, where the Convention is to be held, is a magnificent building, and will afford splendid facilities for the exhibition and business meetings, and Secretary Weingartner will see that nothing is left undone to make it pleasant for all who attend.

J. H. KENT.

Ho for Cincinnati!

Should any one ask the question, Where shall I go to make photographs? the answer is—

Ho for Cincinnati!

My first subject will be the Highland House. This is the finest resort in the city, and when you take the car that conveys you there you will ascend an elevated road about 300 feet long. From the top of the hill is an excellent place to take views. The Highland House stands on the brow, just below the old Conservatory Building and in sight of Eden Park, a place of universal attraction to the visitors to Cincinnati. A bird's-eye view of the city shows it to be surrounded on the east, north and west by beautiful hills, and washed on the south by the finest of our western rivers. No one desiring to see the sights here should fail to enter it; and any member of the fraternity who wishes to take home some fine views of Cincinnati will do well to come prepared, make a bold stand on the hill, and take a view of the city. After that turn to the left, for here is another grand opportunity. Across the river lie the cities of Newport and Covington, and the surrounding hills, while below we have another fine view of Suspension Bridge. Then we can gather our grip-sacks and take the cars for Eden Park; and the lovers of art will find there some of the most magnificent subjects and be well repaid for their trouble. This park is the most extensive and best improved of all the parks, being 206 acres in area, and all improved except 20 acres. The following are its principal attractions: beautiful scenery, fine drives, and large and splendid reservoirs, which furnish the principal part of the water supply to the city.

Now we may return to the attractions of the Highland House, which is all ablaze with lights and the bustling throng that assembles there every evening. To those who have never visited this resort at this hour it will be a grand treat, and they will return home satisfied if not delighted with their visit.

I hope the brethren will do all in their power to make our next the grandest convention ever held. Let them remember we have one among us who is never asleep, but wide-awake, and doing his utmost to make it a success; but it depends upon the members themselves to do their share also. I hope you will all be aroused and realize that the Convention is of much more importance than merely as an opportunity to meet one another; for here we can compare notes, listen to the best men, and learn something that we never dreamed of. Once more, therefore, I call upon the craft to be up and doing for the onward march to Cincinnati. Yours fraternally,

LEO WEINGARTNER,

Sec. P. A. of A.

Photographic Pencillings.

BY G. H. LOOMIS.

THE weather was the opening topic of our last epistle of THE BULLETIN, and there is plenty of material left for another disquisition on the same subject, but I forbear.

To say that the photographers are out of patience and many of them out of money, by reason of the prolonged absence of sunlight, is only recording a matter of fact; and possibly this may have something to do with the demoralized state of the craft with reference to prices, that we have recently seen advertised here and elsewhere.

It is possible that I am over zealous in decrying the *cut under* competition which is hurting the trade and belittling the profession; and I would not add another paragraph upon the unpleasant theme were it not that several of the more reputable artists have announced "cheap John" attractions in the way of superior work or astoundingly low prices.

We note that a Chicago photographer serves up his best cabinet work for \$2 per dozen, and says in his displayed advertisement that "it is not the first time he has made his competitors howl, and it will not be the last." He adds, what is doubtless true, that it makes his competitors sick to

hear the mention of his name. It is to be regretted that this enterprising class of 'tographers is not confined to the West; but here in Boston and vicinity rivalry has run riot—we note that the new gallery recently opened, and to which reference was made in our last pencillings, advertises cabinets at \$2 per dozen *every day in the week*. We hear, however, that the police are interested in the Sunday circus, and that measures are being taken to give the artists a rest one day in seven—and possibly longer, if they get too tired. Several arrests of these competitors will perhaps purge the profession of some of its unworthy membership, and perhaps advance the price of work. This is a difficult problem to handle; and perhaps we had better drop it, as we have done previously, from sheer inability to do it justice; and yet when it is so much talked of and lamented as leading to the demoralization and death of the business, we can hardly hold our peace and be silent.

Though I have had but few personal interviews with the Boston artists for a month or more, I note their productions with special interest and satisfaction. Among the persevering and progressive, the young firm of Ritz & Hastings are winning high encomiums for their superior workmanship.

"My first success," said a lady showing me a cabinet; "and I have suffered martyrdom from many attempts to please my friends."

We observed the secret of this success was judicious posing; and without the purpose of compliment we speak of these artists as particularly painstaking in this important branch. If we may be allowed to criticise as well as commend, and certainly this is our privilege, we would suggest a little more care with the retouching pencil, for two or three specimens before us are made beautifully artistic at the sacrifice of the natural—no doubt a *flattering* tribute to the subject.

Messrs. Allen & Rowell are holding the leading position in large portrait work, though not a specialty. This kind of work yields a better return for labor and skill invested than the small pictures, and we pre-

sume there is less of the mean price rivalry to which we have referred. We feel quite assured that Allen & Rowell are sound on the currency question, and respect the character and dignity of their vocation too much to get euchred in cut-under club business.

We are again obliged to postpone our anticipated round trip among the city galleries till later on, when we hope by reason of returning sunshine and business activity to find the craft in better courage.

Allusion is made in another part of this letter to police interference with *Sunday sittings*, in some of the photograph rooms of the city; and we learn that our local photo. Association, at its last meeting, adopted a vote of thanks to Mayor Martin for his raid on these violators of Sunday laws.

It is quite opportune for the Association to do this; and it would be a good thing if the salvation army could be induced to come under the skylight and give the operators a rest for soul and body. Where is the detective camera?

I see by the last BULLETIN that there has been a *watch* set upon the person of our mutual friend ROCHE—I am not half as much surprised as gratified with the idea—and I would like to have been present when the Colonel captured him.

Though with no suspicious intent, I have watched this active student in photographic chemistry for the last dozen years, and with many others in the art have derived much valuable information from his speech and pen. It is quite *time* his services were properly and publicly recognized, and if the hat had been passed this way, I would have joined in the watch.

Our Illustration.

THIS month we have the pleasure of presenting our readers, through the kindness of the Moss Engraving Co., with exceedingly fine specimen of photo-engraving, the excellence of which will no doubt astonish our English cousins. The negative was made by Messrs. Grenier & Coonley, without any of the ordinary facilities for portrait work, the head-rest having been

improvised from a broom handle and clothes clip fastened to a wood-bottom chair.

The portrait will be recognized by thousands as a lifelike one of Mr. T. C. Roche, whose labors are known and recognized the world over.

In our next, we shall have the pleasure of publishing a very interesting article, relating the struggles and final triumph of Mr. and Mrs. J. C. Moss in the almost phenomenal enterprise known as the Moss Engraving Co.

The Photogranbers' Ball.

THE First Annual Ball of the Photographers of the City of New York was held at Irving Hall (Fifteenth Street and Irving Place) on Thursday evening, the 17th inst.

A tastefully printed programme, with Cupid having a camera for his chariot as a frontispiece, announced the order of dancing, and gave all the needful information.

The Hall was beautifully festooned and decorated, and in the rear the word—

PHOTOGRAPHERS

in gas jets shone out conspicuously. All the arrangements were very complete, and every one expressed surprise at the perfect success of this, their first effort.

The *maître du bal* was O. J. Frank, and the Chairman of Committees, Mr. Chas. Schaidner, all the members of whom were easily distinguishable by appropriate badges. The music was led by Prof. Saul, and consisted of the large number of pieces composing his full orchestra.

Several of the employers were there, and it is hoped that on the next occasion many more will be present. It was nearly day-break before the merry people departed, all delighted with so pleasant an entertainment.

Rarely have we seen such a fine looking, intelligent, orderly, fun loving, sensible company; and may they live to enjoy many more such annual balls.

The Photographic Process Employed At Stoneyhurst.

BY S. J. PERRY, S.J., F.R.S.

THE photographic process employed at Stoneyhurst for recording the continual changes of the barometer, thermometer, and magnets is that well known as the waxed-paper process; but some slight changes have been introduced which have tended to secure more satisfactory results. In sensitizing and developing the papers are not floated but immersed, as this method is found to be more secure and simple, though somewhat more expensive. It may, perhaps, be of service to others if the whole process as at present actually in use, and giving excellent results, be briefly described.

Each sheet of the waxed paper is first examined by transmitted light, and, if there are any shining patches on the surface, the sheet is rejected. The satisfactory papers are then immersed in an iodizing bath, the proportions of whose constituents are 582.5 grains of iodide of potassium to 417.5 grains of bromide of potassium and forty ounces of distilled water, and sufficient free iodine is added before each new batch of papers is immersed so as to give the solution a decided red tinge. This bath contains 160 ounces. Each sheet is turned over and rubbed down with a glass triangle, in order to remove all possible air-bubbles before inserting another sheet. About twenty sheets can be conveniently iodized at the same time, and whilst they remain in the bath they are each turned over separately half a dozen times, so that they may become perfectly saturated, and any adhering of one to another may be effectually prevented. Spots not detected at first sometimes appear in the iodized papers, and these are also rejected. Iodized papers will keep perfectly for more than a year.

The sensitizing bath consists of forty grains of nitrate of silver to each ounce of distilled water. The whole bath contains fifty ounces of solution, including three drams of glacial acetic acid, and is strengthened, after each batch of six sheets has been immersed, from a stock solution of 100

grains of silver nitrate to the ounce of distilled water. The immersed sheet of iodized paper is turned over several times in the dish, and then transferred successively to two dishes of distilled water, in each of which it is turned again with the same care, so as to insure a thorough removal of all superfluous nitrate of silver. The sensitized papers are dried by being left suspended in a large box.

The developing solution contains forty ounces of the water used in washing the sensitized papers, with four ounces of saturated aqueous solution of gallic acid, four drams of silver nitrate, twenty grains to the ounce of water, and four drams of acetic acid. The washing water is warmed before mixing by immersing the jug containing it in boiling water. The paper to be developed is immersed as before, and is constantly turned over as the photographic trace appears. Twenty minutes generally suffice for developing when the light has acted evenly upon the paper. A better-defined edge is secured for the curve, traced by the point of light, by aid of an intensifier consisting of four drams of a saturated solution of gallic acid in methylated alcohol, two drams of silver nitrate, two drams of citric acid, and one dram of acetic acid; but these quantities are varied with the nature of the curve.

The paper is then sponged with water on a flat glaze and fixed in a saturated solution of hyposulphite of soda. On leaving the fixing bath it is again washed, and then placed in the toning bath of forty ounces of saturated hyposulphite of soda to sixteen grains of gold chloride. Before removal from this last bath the curve should be of a bluish-black tint on a white ground. The paper is then once more washed with a sponge, and left to soak for twelve hours in a washing trough, in which the water is changed every minute by means of a self-acting arrangement kept in motion by a constant stream of water. The curves generally turn out very satisfactory when this process is strictly adhered to; and it may be doubted whether a more sensitive process would be preferable for this kind of work,

as a little stray light, acting on paper exposed for two or three days on the cylinders of the instruments, might then mar the result in spite of the greatest care of the operation.—*British Journal of Photography.*

Another Good Workman Gone.

MR. F. A. WENDEROTH, who since 1857 has been identified with the rise and progress of the photographic art has passed away. His death occurred on the 15th of March, at his home in Philadelphia, in the midst of his family, and in a manner befitting the character of the man. Struggling with the inevitable, he manfully ignored his own ills to minister to the necessities of others by describing to a friend his last invention—one in the line of photo-electrotyping, we believe.

Mr. Wenderoth's success was undoubtedly due, aside from his unflagging industry, to the fact that he was an artist before he became a photographer; and some of his earlier works are spoken of with pride, particularly "The Lion Hunt," which he is supposed to have composed from sketches made from the living animals in the *Jardin des Plantes*. Latterly Mr. Wenderoth again devoted himself to the pencil and his experiments, and although he may not have amassed a fortune, his active, earnest efforts will long be remembered.

He was a native of Hesse-Cassel, Germany, emigrated to California at thirty-five, and removed to Philadelphia in 1857. A wife and four children mourn his loss.

The Air Brush.

AT a meeting of the State of Illinois Photographers' Association, held at the Art Institute, Mr. McEntee demonstrated the capabilities of the air brush before a numerous audience of ladies and gentlemen, who expressed the most flattering approval of the work produced in his hands by this wonderful little instrument. It also received the unqualified endorsement of Mr. John Phillips, an eminent portrait painter of that city.

Sarony's Oscar Wilde.

Decision of the Supreme Court on the Copyright Question.

WASHINGTON, March 17, 1884.

A DECISION was rendered by the Supreme Court to-day in the case of Burrow-Giles Lithographic Company, plaintiff in error, against Napoleon Sarony, in error to the Circuit Court of the United States for the Southern district of New York.

This was a suit brought by Sarony against the Lithographic Company, under section 4,952 of the Revised Statutes, for alleged infringement of a copyright upon a photograph of Oscar Wilde. The only important question raised by the case is whether Congress had, and has the constitutional right to protect photographs and negatives thereof by copyright.

Decision of the Court.

The Supreme Court holds:

First—That there is no doubt that the constitution is broad enough to cover an act authorizing copyright of photographs so far as they are representations or original intellectual conceptions of their authors.

Second—That the finding of facts shows that the photograph sued on in this case was an original work of art, which was the product of the plaintiff's intellectual invention and of which the plaintiff was the author; and that it belonged to a class of inventions for which the constitution intended that Congress should secure to him the exclusive right to use, publish and sell as it has done by section 4,952 of the Revised Statutes.

The Court expresses no opinion as to whether this protection would extend to a mere mechanical reproduction by photographic process of the physical features or outlines of an animate or inanimate object, where there was no originality of thought or novelty in the intellectual operations connected with its visible reproduction in the shape of a picture.

The judgment of the Circuit Court in favor of Sarony is affirmed. Opinion by Justice Miller.—*N. Y. Herald.*

Another.

A VERY nice, neat little catalogue of eighty pages comes to us from a house that has been established in this line of business for forty one years, having been in existence in 1843. Every one knows what house it is, for it is "The Old Reliable," the "Pioneer stock house of the West, and for many years the only one West of the Mountains." This old, old house still promises prompt attention to orders, fair and honorable dealings, first-class apparatus and pure chemicals. There are no wood-cuts in it, but it contains as much good and substantial information, and as many varieties of useful photographic requisites, as any of the more pretentious lists. Of course, nearly all our goods will be found included.

P. Smith & Co., are located at No. 141 & 143 West Fifth St., Cincinnati, O., with a branch at 6 East Broad St., Columbus, O.

F. M. PICKERELL, for the last three years connected with the establishment of James H. Smith, leaves the city this morning for Homer, Ill., where he will establish a fine photograph gallery and in future devote his energies to the management of that business. Our citizens will lose an active and conscientious business man, whom they will heartily commend to the good people with whom he is to dwell.—*Quincy Whig.*

An Amateur's Dark Room.

WE have fitted up in our store a photographic dark room, with conveniences for amateurs to experiment in, and shall be pleased to give those who purchase outfits an opportunity to receive the proper instructions, so that they may be able to use them successfully at once.

AMONG our Special Notices will be found an advertisement for a pushing, energetic young man to travel and sell photographic stock and accessories. A competent and assiduous salesman familiar with dry plate development will find an excellent opening.

The Value of Treating Sensitized Albumen Paper with Ammonia.

In the *British Journal of Photography* for January 18, we find in a very interesting lecture by Mr. Ashman before the London Provincial Photo. Association the following recognition of the value of our American method of treating sensitized albumen paper with the vapor of ammonia.

"When hydrate of ammonia is exposed to the atmosphere pungent fumes of the gas are given off. If these fumes be collected in a closed box, and sensitized paper is placed therein, the sensitiveness is considerably increased—in fact, nearly doubled—and the color of the print becomes purple, or blue, according to the energy of the gas and the duration of its action. Among other advantages, fuming permits less concentrated silver solutions to be employed in sensitizing. Less time is occupied in printing, also in toning, meaning economy in time and material, and mealiness is never seen. It is for this latter reason that pictures printed on fumed paper give such better results in copying than those pictures which are printed on unfumed paper.

Facts and Fancies.

MR. AND MRS. HENRY G. THOMPSON, of Chicago, have just celebrated their china wedding. Everything in china conceivable, and a few things not mentioned, were included among the presents.

Mr. J. H. Smith, who has recently removed from Quincy, seems to have been greatly esteemed by the good people of that city, appropriate resolutions having been adopted on his departure.

Sometime ago a Canadian photographer got into trouble by decorating the portrait of a lady, his patron, and placing it for a short time in the show-case. Now a Chicago man has been catching it for placing a Mr. Goldbey's portrait *in the same frame* with others whom Mr. G. does not admire as companions.

Pictures.

MR. URANUS HORD, of Dayton, Ohio, kindly sends us a couple of fine photos—one of the National Soldiers' Home and another of the Flower Garden. They have both been much admired by those who know what good pictures are.

From Mr. Chas. E. Wallin, of Montgomery, Ala., some soft, delicate, well posed, well lighted portraits, and a view of Montgomery landing, with the steamboat "Susie B" in the foreground.

It is a pleasure to receive such nice pictures, and to contrast them with those made in the same town twenty years ago.

CORRESPONDENCE.

PHILADELPHIA, April 10, 1884.

MESSRS. ANTHONY & CO.

Dear Sirs: Bound price list received. Very handsome. Thank you.

Yours,

WILSON, HOOD & CO.

ROCHESTER, N. Y., March 12, 1884.

J. H. ALTHEIDE & BRO.

The camera stand is received and proves to be the best we ever had.

Respectfully,

J. H. KENT.

MAYSVILLE, KY., Feb. 22, 1884.

E. & H. T. ANTHONY & CO.

Dear Sirs: Please find enclosed my check, and don't stop the BULLETIN. I could not do without it. And oblige,

Yours, J. T. KACKLEY.

FULTON, N. Y., Jan. 23, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: Please send me the BULLETIN for one year. After once taking it I can't do without it.

Yours very respectfully,

J. H. MCGOWAN.

MESSRS. ANTHONY:

I find your journal one of real information, and valuable to me, as it must be to every progressive photographer.

Respectfully,
A. K. DOLE.

SIDNEY, NEB., Jan. 21, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: The dry plates I have received are excellent, and the *best* I ever tried.

Yours truly,
OTTO HEINS.

INDIANAPOLIS, Nov. 20, 1883.

MESSRS. ALTHEIDE & CO.

Dear Sirs: The large "Gem City camera stand" has arrived. It is the best I have ever seen. Can make no suggestions for further improvements.

Yours truly,
D. R. CLARK.

OROVILLE, CAL., Aug. 29, 1883.

MESSRS. E. & H. T. ANTHONY & CO.

By the way, have I remitted for the BULLETIN for this year? If not, inform me and expect remittances immediately, as to be without the BULLETIN is worse than being without the city dailies. Long live the BULLETIN, the best photo. book published!

FRED. H. HEWITT.

EDITOR OF THE BULLETIN:

Dear Sirs: Having been informed that my answer to Mr. Wm. Bell's question relative to the extreme sensitiveness of the Eastman special plates (as reported in last month's BULLETIN article on *Dry Plate Talk in Philadelphia*) had been misconstrued as an attack on Mr. Bell himself, I herewith disclaim any such intention; and I can only wonder that any one of unbiased mental vision could see any reference in my remarks to one who was neither an agent or manufacturer of dry plates.

Please insert, and oblige, very truly,

DAVID COOPER.

GREENSBURG, IND., Feb. 18, 1884.

E. & H. T. ANTHONY & CO.

Gentlemen: Find enclosed \$2 00. Send the BULLETIN right along. It continues to be good and getting better. Also find enclosed \$2 00, for which send the BULLETIN to Mr. H—, a new *convert* for 1884, that I send you, which secures the premium.

Send it; I know it is good.

Yours, etc.,
L. MOBERLY.

RICHFIELD, UTAH, Feb. 27, 1884.

E. & H. T. ANTHONY & CO.

Dear Sirs: I feel like expressing my gratitude to you for Eastman's special dry plates, which I now work all the time. With them I can make quicker exposures than by any other plates, and cleaner work, and also very soft and delicate.

Yours respectfully,
J. P. CHRISTENSON.

GREENFIELD, MASS., Feb. 13, 1884.

MESSRS. ANTHONY & CO.

Please excuse this delay in sending the needful for the BULLETIN for 1884. You know, of course, that after reading it so many years, and possessing nearly all of the volumes bound, I would not attempt to keep house without it.

Respectfully yours,
B. J. POPKINS.

COATICOOK, March 10, 1884.

E. & H. T. ANTHONY & CO.

Dear Sirs: Enclosed find \$2 00 for the coming year, 1884.

I like the new orange dress much, but what it encloses much more. To my mind the illustrations of the BULLETIN are far ahead of any book of the kind. That's right; give us the silver print as often as you can, for they show the true quality of the negative, wet or dry, to the best advantage.

Yours Respectfully,
M. D. KILBURN.

ANTHONY'S

PHOTOGRAPHIC BULLETIN

FOR MAY, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

Page, for a single issue,	\$15
Half page, " "	8
Quarter page, " "	5
Eighth page, " "	3
Special Notices, per line,	25 Cents.

—◆◆◆—

Anthony's

Photographic Bulletin,

ILLUSTRATED.

Terms for 1884: Two Dollars.

Unillustrated, One Dollar.

Payable in Advance,

And only to those who pay.

Iron Printing Process.

THE publication of Herr Liesegang's work on methods of producing copies of tracings, etc., naturally directs attention to processes which, notwithstanding their intrinsic merits, have not received that amount of attention which they deserve.

The processes we refer to are those which depend upon the effect of light upon salts of iron. The general principles involved are not new discoveries—indeed, the process which he called "cyanotype" was described by Sir John Herschell in the early days of photography. However, the variations and improvements which have been from time to time introduced; the practical utility of the processes for the reproduction of architects' and engineers' drawings; and the probability that the direction of the attention of experimentalists to these methods may result in further improvements and increased applicability, induces us to think that they should occasionally be brought under the notice of our readers.

We now propose to give three of the leading and characteristic methods of producing different results. The first to be described is that in which the dark image is produced by the action of light upon those portions of the sensitive surface exposed to its action. The resulting prints, therefore, show light and shade the reverse of that which is seen on the drawing or tracing

copied, the black lines of which show out in the print as white upon a blue ground.

In many cases—especially if the drawing is not to be colored—this is of no consequence, and the simplicity of the process commends it to those for whom the disposition of light and dark color is not important.

A sheet of paper is floated for two minutes upon the following solution, which is mixed in the dark room:

Water, 40 ounces.
 Ferridcyanide of potassium, 3 "
 Ammonio-citrate of iron, 2½ "

Or the ferridcyanide may be dissolved in twenty-five ounces of water and the ammonio-citrate in fifteen, and these stock solutions mixed in the proportion of five and three as required. The paper, if well dried and preserved from light, moisture, and air, keeps for some considerable time.

As it is intended to use the photographic copy direct, and not to reproduce from it the tracing to be copied, it must be laid with its face against the glass of the printing-frame; if the face were in contact with that of the sensitized paper the direction of the lines, etc., would, of course, be reversed as in a negative. The printing is carried on until all the lines are visible, showing as a dingy yellow upon a dark ground. The paper is then taken from the frame and laid in water, which is repeatedly changed, until the lines show as perfectly white upon a blue ground. This blue ground becomes somewhat darker if a few drops of chlorine water are added to the washing water. Dilute hydrochloric acid has a similar effect.

A variation of the process consists in changing the blue into black, in the following manner: The print is immersed in a four per cent. solution of caustic potash until the blue color disappears and is changed into a yellow. The print is then well washed and laid in a solution of tannin one part, water twenty-five parts.

It takes in this bath a beautiful black tint, which is just as permanent as our ordinary writing ink.

The next process to be described—that in which the effect of the light is to convert

the iron compound into one which may be discharged from, instead of fixed in, the paper—gives, consequently, an image resembling the original tracing; that is to say, one showing dark lines upon a white ground.

There are several variations of this process, all involving more difficulty and requiring more care than the method above described. We shall give one of them—that of Pizzighelli. For this method three solutions are prepared:

A.

Water, 11 ounces.
 Gum arabic, 2 "

B.

Water, 11 ounces.
 Ammonio-citrate of iron, 5 "

C.

Water, 11 ounces.
 Perchloride of iron, 5 "

The solution A becomes in a few days useless; B and C, in closed bottles, remain good for some weeks. For use these are mixed thus:

A, 20 parts.
 B, 8 "
 C, 5 "

and in the order named, otherwise the gum coagulates. The mixture is at first thick, but after some hours flows freely, and remains good for some days.

The paper must be well sized, so that the solution may remain upon the surface and not sink into the paper. Paper sized with gelatine is to be preferred to that prepared with starch.

The paper is laid upon a flat board, and fastened along two sides with pins. The sensitive compound is spread with a broad painter's brush as evenly as possible, and then smoothed with a badger brush.

After drying, the paper is pressed flat and kept from air and light. The paper is now exposed to light under the tracing; but as the visible change is very slight, a few slips are exposed under a piece of similar tracing-paper with lines upon it in the same or another frame. From time to time one of these slips is taken and placed in the de-

veloping bath. When the ground develops white and shows no blue points the print has been sufficiently exposed to the light. If, however, the lines appear weak and undecided the exposure has been too long. In direct sunshine an exposure of one minute may be sufficient; in cloudy weather from five minutes up to an hour may be required.

The development of the pictures is as follows: Three dishes are placed side by side upon a table. The first is of well varnished wood, and contains a solution of two parts of ferrocyanide of potassium in nine parts of water. The second dish, which contains water, is of zinc, and must always be kept very clean and occasionally washed with potash. About twenty inches above this must be a water tap, with an india-rubber tube sufficiently long to reach the dish. The third dish is of wood covered with gutta-percha, and contains a mixture of eight parts of hydrochloric acid or three of sulphuric acid in one hundred of water. The print, upon being taken from the printing-frame, has the edges turned back for a width of from three-eighths to three-quarters of an inch. This is to ensure that none of the solution touches the back of the print, as that would cause a stain. The exposed side of the paper is carefully laid upon the developing solution and the hand pressed lightly over the back to drive out air-bubbles. After a few seconds the paper is quickly raised from the bath and held vertically till the developing is completed; that is to say, until all the lines show as blue. This takes from forty to fifty seconds. The picture is then laid on the water bath, and after a short time is immersed in the acid bath. The print is moved about with a wooden spatula in the acid, and the lines are soon seen to become stronger; the ground loses its yellow color and becomes white. The print must not be left for more than five or six minutes in this bath, or the paper will be weakened; meanwhile the water dish must be frequently rinsed with abundance of water, especially in the corners. The print is now laid in it and washed with a forcible stream. After thorough washing the print is hung up to dry.

If, in spite of all precautions, there should appear spots of blue in the white ground, they may be removed, after drying, by touching with a dilute solution of potash and drying off with blotting-paper. The same solution answers also for removing blue stains from the fingers.

The third process that we propose to describe is one which, like the second, gives dark lines upon a white ground; but these lines, instead of being blue, are of a dark violet-black color. The sensitizing solution is composed as follows:

Water,	30 ounces.
Gelatine,	1 ounce.
Perchloride of iron in syrupy condition, (by measure)	2 ounces.
Tartaric acid,	1 ounce.
Sulphate of iron,	1 " "

The exposure required is several minutes of sunshine, and is judged to be sufficient when the paper—except in the lines that are to be dark—has lost its greenish-yellow color and become white. It is then developed in a bath of one part of gallic acid dissolved in ten parts of alcohol, and diluted with fifty parts of water. In this solution the lines immediately become blacker, and the print is then finished by being well washed in water.

For all these processes—perhaps the last more especially—it is necessary that the lines in the drawing to be copied should be very solidly drawn, and in india-ink or some medium possessing great opacity. The white parts also should be as transparent as possible; and, in fact, the drawings for the purpose are generally made on a transparent kind of tracing-paper.—*British Journal of Photography.*

Additions to the Developer.

BY G. WATMOUGH WEBSTER, F.C.S.

IT appears singular, at first sight, how difficult it is to remove the photographer from the old tracks. All of us, no doubt, at one time or another, have tried many useless experiments and wasted valuable time in the endeavor to adopt in our practice some

worthless formula privately given to us or publicly recommended; and in time, I expect, the result is, in most cases, a gradual hardening of the photographic heart to the verge almost of utter disbelief in any new thing. It is only the professional photographer, who knows the difficulty and danger consequent upon altering the routine of his establishment, the time spent in teaching others the new way, and the material wasted before perfection in its use is arrived at; so that, after all, it is not to be wondered at that he shrinks from the risks of loss and the consequence of upsetting his routine till he is fully assured of a real gain to accrue from the change. The more, too, is the feeling likely to be developed when one remembers the number of dropped processes that have been ushered in with the loudest of praises.

Feeling all this, I was still surprised, however, the other day, upon calling on a photographic acquaintance of great skill, to find that some well-known and fully discussed methods of working were not in use at his establishment. I can scarcely say they were unknown to him, but I did come to the conclusion that he did not read his journals much. The tendency of my conversation with him led me to think that I might with no disadvantage return to an exceedingly well-worn topic—the addition of certain chemicals to the developing solution.

My readers need not turn away aghast at the thought of a list of the thousand and one chemicals suggested for the purpose being presented to them. It is mainly of sulphite of soda that I intend to write. At one time it was strongly urged against it that it slowed the developer, and at other times a number of little faults were found with it, so that we may well imagine that to those who have not been brought into contact with its actual use by other hands, its employment would appear to bristle with so many disadvantages that it would not be worth while adopting it in their practice.

To such, and all who have not yet adopted it, I should like to say that this plan of Mr. H. B. Berkeley's is to me of inestimable value. I would not be without the salt

if it were many times the price it is, though as it is so very cheap no one can assign its cost as a reason for objecting to it. I do not find any practical difference in the behavior of the developer with and without the addition of sulphite; while, as to the average character of the resulting negatives, the comparison is utterly and entirely in favor of the sulphite-developed ones. In fact, I cannot conceive of anyone, after having once given it a trial, ever ceasing to employ it—that is to say, of course, if he desire to produce the highest quality of work.

As to the proportions in which to use it opinions vary, but I have a very confident belief that two ounces of sulphite of soda to one of pyro. is the best proportion.

I have put to the true test, that of actual working practice, all proportions—from equal weights of each to one of pyro. and four of sulphite—and have found efficiency and economy to be best studied by the two to one proportion. If only one to one be used the exception from yellowing is not complete; if four to one be adopted it possesses little, if any, superiority over two to one, and is naturally more costly. Now and then, when I have had a new batch of plates, or when my usual mode of working has varied for some reason, I have given the plain pyro. without sulphite a trial, but have been very glad to put in a quantity before I have passed many plates through the fixing bath and been able to see their color, the old sickly yellow of the early pyro. days being a thing of the past entirely. I should, however, interpose here and say that no proportion whatever of the sulphite will give a "wet-plate appearance" to a negative that has had a prolonged development, as in all negatives, unless fixed in new hypo. or treated some time with alum, there will be a faint yellow appearance, which, however, does not in any way approach the old sickly yellow.

The sulphite is procurable in the shops both as ordinary crystallized or recrystallized. Either will answer the purpose, but I use myself, and would recommend others to use, the recrystallized on account of its greater purity and consequent uniformity

and of its not being liable to contamination with carbonate of soda, which must interfere with the power of the developing solution.

I am in the habit of dissolving a pound at a time, and keeping in a stoppered bottle for use each time an ounce of pyro. is dissolved. I make it in the strength of one in four—that is, a pound of sulphite in sixty-four ounces of ordinary water. It is most easily dissolved with hot water. Though this strength is just within the limits of solubility of the salt as given in the text-books, I have found at times that some of the salt has crystallized upon the bottom of the bottle, thus showing either that the salt recrystallized though it was not really pure, or else that the authorities were wrong. I am inclined to believe the latter to be the more probable supposition.

The other addition to the developer that I would again allude to being my own suggestion, it behooves me to speak of it with becoming modesty. Nevertheless, after a long experience with "citrate" to arrest the effect of over-exposure, I must say I cannot speak too highly of it. It is far less known than the use of sulphite; in fact, I know of very few photographers who use it, yet I do not hesitate to say that citrate of ammonia added to the developing solution infinitely surpasses any other remedy I have tried, and they have been many.

When a negative has started developing, and the rapid evolution of the image tells of great over-exposure, the negative may be saved by instant and free use of the citrate; while if citrate of ammonia be added to the solution before beginning to develop, the difficulty will be to make any image appear at all, though the exposure may have been dozens of times too long. Further: the citrate does not appear to destroy the image, so that, if development be commenced with it and then it is found to restrain it too much, it is only necessary to mix up some fresh solution without any (or with less) of the citrate to obtain any development of which the negative was originally capable.

The citrate I prefer to use is that of ammonia. It possesses the greatest restraining power, and when used in small quantities

can be made to adjust development and exposure to perfection. Two to four grains (I always keep it in solution) to each drop or minim of ammonia will arrest development almost entirely with an average plate, and will readily enable a good negative to be obtained if twenty times too much exposure have been given.

In conclusion: I may say that if what I have now written should help to draw attention again to two additions of proved value for the developing solution, and only a few even will try them, I shall be sufficiently rewarded.—*British Journal of Photography.*

Photographing Microscopic Enlargements.

THE application of photography to the microscope requiring sunlight to imprint the image upon the sensitive plate is well known to our readers; for it has long been recognized as the quickest and most accurate method of delineating objects, and obtaining permanent results thereof, which can be reproduced in unlimited quantities by our (Anthony's) Indotint process for dissemination, comparison and future study.

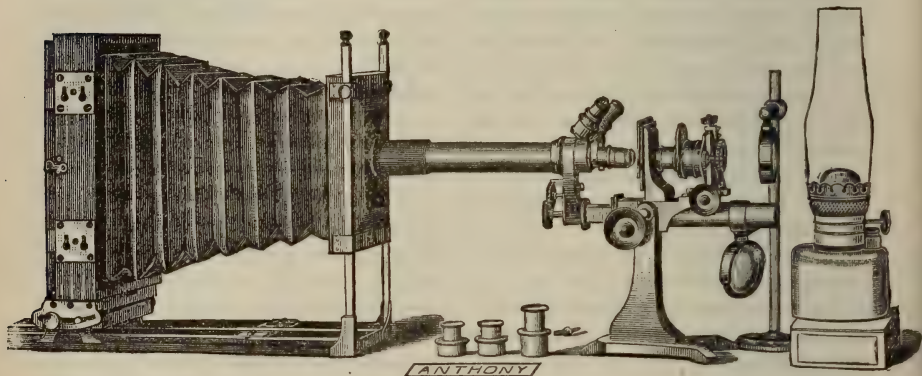
The use of the microscope in nearly all branches of the natural and applied sciences, arts, and its now rapid application in various manufactures, has called for much simpler and more portable apparatus than is possible where the sun is the required source of illumination; and furthermore, an apparatus which can be used day or night, and in any place. The increasing inquiries for simple means for this work, readily obtainable and easily manipulated, has induced us to make an investigation and conduct a series of experiments upon the possibilities of this branch by strong lamplight, and we are pleased to announce that with the Eastman superior dry plates, Novel camera, good microscope and kerosene lamp, fine negatives have been obtained which a short time since were only supposed possible by strong sunlight. We further investigated the matter of using larger plates than those in common use for this purpose, and find that 8 x 10 and even larger can as readily

be covered by the image, as those of smaller size when using proper facilities. This fact will be duly appreciated by a large class of microscopists.

There are two methods of using the microscope for photographic purposes, each having special features of application, viz :

1. With the eye-piece in the body and a short camera.
2. Without the eye-piece, the body re-

moved if possible, and a long camera. The first method is illustrated here and will be more fully described than the second, which will be found illustrated in our book *How to Make Photographs*. Good results have been obtained by either method, though each has advantages for certain classes of work, convenience of manipulation, compactness and portability not common to both.



The above cut represents the adaptation of one of our 8 x 10 Novel cameras to an ordinary microscope stand. Any other good complete microscope stand could be substituted for the one here shown. The body of the microscope is connected light-tight with the camera by a short tube of rubber or black velvet, its flexibility permitting backward and forward motions in focussing. The fine adjustment must be very delicate, and without lost motion, as upon it depends much of the success of the work.

A triangular nose-piece is here shown, carrying three objectives of different powers, a convenience for some work, but not an essential feature. The stage shown is a plain one—a mechanical stage of delicate movements is preferable, as often but one hand can be used in selecting the field of the object to be photographed while looking into the camera at the same time.

A sub-stage carrying a condenser of some form, having adjustments for rendering its optical axis coincident with that of the objective, is a necessity for amplifications

much over 100 diameters. The ordinary bulls'-eye is shown in position; and with a duplex burner in the kerosene lamp *as the means of illumination*, as above shown, negatives of any desired magnification up to 500 diameters can be readily made. Introducing in place of the bulls'-eye a pair of our more powerful condensers, negatives of objects magnified to over 1,000 diameters covering an 8 x 10 plate have been readily obtained in the Novel camera by lamplight, simply with a dry $\frac{1}{8}$ -inch objective. Using the higher powers of the homogeneous immersion objectives, well known to all microscopists, negatives of much higher amplification may be produced. Most of the micro-organisms now known can be seen with wide angle objectives of good resolving and defining power when magnified 1,000 diameters or less. The majority of photo-micrographs are however taken with low powers, and can be quickly obtained by lamplight at any convenient time.

A great range of work can be done with Grunow's wide angle 1-inch objectives in the 8 x 10 Novel camera, using the A, B,

or C eye-piece to give the desired amplification. The plate-holders of our large cameras all have inside kits to hold smaller plates, which is a very desirable matter. As will be seen from the above, the first method permits of very compact and portable apparatus being used, which can be set up in a few moments ready for use.

By securing the camera and microscope to a frame or board it may be used in a vertical or inclined position, reflecting the light through the microscope in the ordinary manner.

In the second method, the area of the image is more or less contracted by the body of the microscope, unless it can be removed from the objective carrier, which is generally only possible in forms similar to the one shown in the cut. Beside the Novel cameras, many other forms of our cameras are extensively used.

For long cameras none are superior to our 8 x 10 extension (O I C copying) cameras, or the larger sizes, if desired.

To aid those wishing to select a camera for their work we would say that with the stand and camera shown, a so-called 1-inch objective—really 1 and $\frac{2}{7}$ in. focus—gave without the eye-piece a magnification of 25 diameters when the ground glass was 30 inches from the object. When the A eye-piece was inserted, the magnification was 60 diameters, and with the B eye-piece 100 diameters. To obtain a magnification of 50 diameters with the above objective, exclusive of the eye-piece, requires the object to be five feet from the ground glass.

Opticians do not rate their objectives alike, and many so-called inch objectives are much less—or more, as in the above case. The microscopist can easily determine the exact focal length of his objectives by putting the stage micrometer on the stage and projecting the image upon the ground glass, and seeing how many times it is magnified; then divide the distance in inches of the object from the ground glass by the number of times it is magnified increased by one. The result will be the focal length of the objective.

A $\frac{3}{8}$ -inch objective without eye-piece, ob-

ject 30 inches from ground glass, magnified 250 diameters; with the A eye-piece, 600 diameters, and with the B eye-piece 1,000 diameters. All microscopists have a great range of objectives of different powers, so that most any desired magnification can be produced. The improved method of focussing will be found a great help when working with high powers.

The Eastman dry plates have been extensively used for this class of work, giving the best possible results. The Tropical plate has no equal for the fine micrometrical work of this branch, delicate lines being reproduced smooth and sharp when proper developers are used. We have given the latter subject great attention, and are now able to reduce the length of exposure formerly required and still produce fine results.

Many members of the medical profession have already made extensive use of photo-micrography in their physiological, pathological and other investigations, and all agree as to its great value. The special room and facilities heretofore required for sunlight have prevented its more extensive adoption. Now with this simple apparatus and with the dry plates, by lamplight a photo-micrograph can be obtained in a few moments of leisure. The plates can be exposed in the camera, and developed at any convenient time afterwards.

Two or more dry plate-holders are a great convenience, as they can be filled with plates and ready for use at any spare moment.

In a physician's practice there are many objects costing much time and trouble to prepare, even for temporary examination, which it is very difficult if not impossible to preserve. A photo-micrograph is their best substitute; it is quickly made and true to nature. Few persons have the necessary time or skill to execute drawings, which are more or less diagrammatic, leaving out important minutia which is part and parcel of the structure. By photography the delicate lines are shown and preserved for future study and comparison, and the practice of the art can be readily acquired. A photo-

to-micrograph often shows details not noticed in the microscope.

The National Board of Health of the United States has the honor of first adopting photo-micrography in recording their extensive microscopic investigations for the causes of epidemics, etc. Physicians will find our photographic outfits of short extensible cameras unequalled for this important work, either by lamplight, electric light, or sunlight. They are light, but very strong and steady, and easily manipulated.

Naturalists, botanists, mineralogists and others will find our outfits all they can possibly desire, very portable, and ready for use in the study or out in the field. They can also be used for the ordinary purposes of photography, a very great desideratum on expeditions. Professors have long used photo-micrography to furnish illustrations for their lectures, etc. Students in any of the departments of science are finding photo-micrography a very important aid in acquiring knowledge and of making original researches, its practice furnishing a pleasant and profitable recreation.

Its use is being daily extended by paper and textile manufacturers in determining and recording the quality of different materials. The importance of such examinations is so great that each manufacturer of silks, woollens, or cottons will have a special department for this branch of photography in a short time.

Its application to the determination of and recording the purity of foods, groceries, etc., is of increasing importance, and will be a special department of leading houses for their own and their customers' protection. In large manufactories and houses where the electric light is used, it can be simply arranged to furnish the means of illumination suitable for any research desired.

Photo-micrography is one of the most agreeable recreations for the man of business, furnishing pleasant and instructive thought for the mind and beautiful illustrations of the wonders of nature for the admiration of others. Large numbers of microscopists will be glad to practice this simple and delightful branch.

The Moss Engraving Company.

BUT few persons are aware to what extent photography is used, directly or indirectly, in the various arts and trades. To even enumerate its various applications would make a very long list. The production of engraved plates for printing purposes by means of photography is at present exciting great interest, not only in this country but all over Europe; and new processes are being introduced with such rapidity that it is difficult to keep trace of them.

Attempts were made in this line some twenty-five years before Daguerre's great discovery was announced to the world, and it has been held by some writers to be owing to the early experiments made by Nicéphore Niepce (Daguerre's partner) in this direction that we owe the invention of photography. After the experiments of Niepce, the next to attempt this was Fox Talbot. Soon after this many others entered the field; among the most prominent of these we may name Dr. Donné, Prof. Grove, George Mathiot, Fizeau, Nègre, Poitevin and Paul Pretsch.

The first, however, to achieve a complete practical success in this line was one of our own countrymen, John C. Moss, who was born in 1838, in Washington Co., Penn. In 1856 he married Miss Mary A. Bryant, the only daughter of a widow lady. In 1858 he was engaged in the photographic business in Monongahela City, Penn., and while reading an account of some experiments made by Prof. Grove in which he tried to produce engraved plates by etching out the daguerrean image, but having failed to get his etchings deep enough to be of any practical value, it occurred to Mr. Moss that by using Prof. Grove's method, he could etch through the thin coating of silver on the daguerreotype plate, and then change the plate to another solution which would act upon the copper and not act upon the silver, and by this means get the required depth.

He told his wife of his plan. "Why not try it at once?" said she, "and I will help you." "But I have no galvanic battery,

and there is none to be had in this place ; besides I cannot spare the money to buy one, if there were." "Can't you make one yourself," said she. "If I only had some copper and zinc plates I have all the chemicals," he replied ; "but there is no such thing for sale nearer than Pittsburgh." His wife disappeared for a few moments, and then returned with their copper kettle and zinc washboard. "They would do," said he ; "but, oh my ! how your mother will scold if we cut them up ; they are almost new." "Leave that to me," said she, "mother is out and we will get the battery made before she comes back ;" so they went to work with might and main, and by bringing the sugar bowl and the teapot into requisition for battery cells, they soon had the battery completed ; but before they had time to clear away the scraps, their mother came in. She didn't scold just then ; she couldn't ; she only held up her hands and gazed in stupefied amazement.

That night they managed to get all their appliances in their sleeping room and then, in stocking feet, they experimented nearly all night. Before morning they had produced their first plate. It was all bad but one little patch, about as big as one's finger nail, and that, as Mrs. Moss expressed it, was "*just beautiful*, and almost as deep as a well." Alas ! alas ! great inventions are like Topsy in the story of Uncle Tom's Cabin, who said—"I never was born ; I grewed."

In their exultations that night they did not realize that nearly ten years of constant experimenting under the most trying circumstances, often in great poverty and want, would roll away before they would be able to make the first plate that would be paid for and used.

He soon gave up the photographic business and commenced the publication of a country newspaper. This was not successful ; so he went to Philadelphia and worked as a journeyman printer through the day, and spent his evenings and Sundays in reading and experimenting, his wife assisting him in everything he did. Through the day she would purchase and mix the chem-

icals, and get everything in readiness for him. Many, many times success would seem so near that he would give up his employment and they would devote all their time to experimenting, until not only their little savings were exhausted, but until they had sold everything that could be disposed of. On one occasion, having sold nearly everything but a feather bed, a gift from Mrs. Moss's mother which they had resolved never to part with, he said that if he had a few dollars more to buy chemicals, success would be sure. Overhearing the remark Mrs. Moss quietly left the room, and in a short time returned with hasty steps and presented to the astonished eye of Mr. Moss a \$10 bill.

"Why, Mary ! where did you get that ?" exclaimed he. "The other day I heard the washerwoman say that she was saving up money to buy a feather bed ; so I went and sold her mine ;" then added, with a merry laugh, "feather beds are very unhealthy to sleep on, anyway. We will pick out a soft board ; it will make us grow straight."

The \$10 was soon spent, and still other difficulties to be surmounted ; more chemicals were needed. Nothing remained but a small cooking stove and an old-fashioned rocking chair, a sort of heirloom of Mrs. Moss's family ; and her mother had charged her never to part with it, for it would bring bad luck to the family. So the stove went first. Mrs. Moss said cheerfully, "it made the room too hot ; besides, I will give up tea, and I can make your coffee and cook what little we need upon our alcohol lamp." A few more chemicals were still needed. Mrs. Moss was again equal to the emergency—the old chair was sold ; but this time, as she drew out the money, the tears came to her eyes, but when she saw the sadness of her husband's pale and haggard face, she said cheerfully, "never mind ; we will soon live in our own home and have all the nice furniture we want." Success was still far in the future. Mr. Moss went back with a heavy heart to "sticking type," while Mrs. Moss kept on with their experiments.

Many such domestic dramas had to be

passed through before success finally crowned their efforts. We shall only mention one more instance.

It was after they had commenced practically working their process in a small way in their own dwelling. They had what they considered a large order on their hands, and their chemicals were, as photographers would say, "kicking" badly. One part of their process failed them entirely; the chemicals would not work as they had worked before. Day after day passed, but still they could not succeed. The time was up for the delivery of the plates, and they were getting fairly desperate; they saw that one part of their process must be radically changed before they could ever succeed. They had scarcely slept for several nights. Mr. Moss had devised one method of overcoming the difficulty which seemed to him faultless in theory, but still it failed in practice. Mrs. Moss insisted that he had not given it a fair trial. About two o'clock in the morning Mr. Moss sat down upon the side of the bed worn out, and in utter despair. Tired nature soon gave way and forced sleep upon him.

When he awoke in the morning, he saw by the bright smile on his wife's weary face that she had overcome the difficulty. She had prepared for him a good breakfast—a hot loaf of Graham bread, with fresh butter, and a pot of steaming coffee. Mrs. Moss had remained up all night and had repeated the experiment with complete success. No king's feast was ever eaten with so much relish as that little family enjoyed their plain and simple breakfast, for it seemed to them that the last difficulty had been overcome. The order was speedily finished, and the proceeds sufficed to supply their most urgent wants. But their troubles were far from being at an end. Their outfit, though sufficient for experimental purposes, was not suitable for practical work. However, they gained ground little by little, until they found it necessary to take a place of business in New York City. They fitted up a loft at No. 26 Cedar Street, but still labored under great disadvantages for want of capital and skilled workmen. Here

their work began to attract considerable attention, and Mr. Moss was induced to engage in a stock company with a view to working the process on a large scale.

In 1870 the Actinic Engraving Co. was formed; but as his associates had no experience in the business, and could give him but little assistance, and were willing to invest but a small amount of money, he was worse off than he had been before the company was formed.

For nearly a year and a half he struggled against adversity, and was finally compelled to withdraw from the company in which he had lost all of his first outfit. He soon after entered into an arrangement with Rev. Mr. Hobart, who agreed to loan ten thousand dollars for a half interest in a new company to be formed. The Photo. Engraving Co. was incorporated in the spring of 1872 and opened an establishment at No. 21 Dey Street, but had barely commenced operations when they were completely burned out. They immediately fitted up again at No. 62 Cortlandt Street.

The first year proved very discouraging, as new apparatus had to be constructed or purchased, and above all employees had to be patiently and carefully trained to perform their respective duties, it being an entirely new branch of industry for which no skilled labor could be procured; and to make matters worse Mr. Moss's health was rapidly giving way. Long hours of toil and great mental anxiety had reduced his weight from 170 to 110 pounds; besides, he had almost become incapable of sleep. He seldom slept over two hours out of the twenty-four, and then only for a few moments at a time, while his ever-patient wife sat by his bed and applied wet cloths to his fevered brow. He looked like a man in the last stages of consumption. One Saturday night their bookkeeper announced a small gain for the last month. This favorable announcement brought about quite a crisis with Mr. Moss. He went home in a very happy state of mind, and that night he slept so soundly that his wife watched by his bedside throughout the night—he was so calm and motionless that she feared his end was

near. After ten or twelve hours he awoke, greatly refreshed, and from that time he continued to gain in health and strength.

The second year the company began to prosper, and Mr. Hobart was soon paid back the \$10,000 he had advanced to the concern. After that their prosperity continued for several years. But Mr. Hobart was getting old, and his health grew feeble. Under these circumstances he became loth to expend more money for new improvements, while on the other hand Mr. Moss, being in the prime of life, was eager to go on increasing the facilities to meet the growing demand for their work. Dissatisfaction gradually sprung up between them, so Mr. Moss named a sum which he would be willing to give or take for the business. Mr. Hobart and his friends bought out the interest of the Moss family. Mr. Moss was then free, and with all the capital he needed, and with his long years of practical experience and many new improvements and inventions which he had never felt warranted in introducing previously, he immediately set about fitting up on a large scale.

In the spring of 1880 the Moss Engraving Co. was formed, with John C. Moss as President and Superintendent; his wife, M. A. Moss, as Treasurer; their son, Robert B. Moss, Assistant Superintendent, and Jas. E. Ramsey and Henry A. Jackson, old and trusted employees, as Secretary and Assistant Secretary. This company was a great success from the start, and is now the largest establishment of the kind in the world. Their place of business is at 533, 535, 537 and 539 Pearl Street. Our space will not permit us to enter into a detailed description at present, but we contemplate doing so in a future number.

Mr. Moss, though in his forty-seventh year, is in the best of health, and looks younger than he did when we first remember him some twelve or fifteen years ago.

Mrs. Moss was in rather feeble health for several years after the death of her beloved mother and an only daughter; but she rides out almost daily, has regained much of her wonted energy and cheerfulness, and

seems to enjoy the fruits that, with her husband, she labored so faithfully to earn.

What to Make for One's Album.

IN attempting to organize his own work in harmony with some of the ideas expressed in a previous article, one will doubtless, in looking over his album, find himself disgusted with its condition; for, like all albums of amateurs, it is probably filled with beautiful odds and ends, scraps from the mountain, the seashore and the city—here a landscape and there a portrait—a medley which is eminently unsatisfactory.

In order to make his work effective and to enjoy a sense of satisfaction from it, and as an object in seeking out new work, the amateur should take up some particular branch, make a study of it, and endeavor to elaborate it as much as possible. To select a topic for illustration is, however, a difficult task. There are so many pleasant and promising fields, and each one is perhaps in such a position, that he is tempted to enter upon some corner of it. In making a selection, he should first consider his opportunities. What places are most easily and most generally accessible to him? He should next consider his time. If time permit, inclination call, and opportunities present, then he may enter a field with a view to success. For a busy man who has only mornings and evenings at his disposal, and a long summer vacation for uninterrupted work, it would be folly to attempt portraiture. His progress would be so slow, and his opportunities so few, that his time would be in a great measure wasted. Such a person will usually find landscape work by far the most profitable, and a summer vacation will bring a harvest of good things.

Having selected a line on which the greatest attention is to be devoted, something more is necessary. If the pictures are to have a connection and to illustrate a subject in the city, for example, the landscape photographer will find that series of subjects will give zest to his work, and possess considerable value.

A gentleman in Brooklyn and another in New York have made views of the exteriors of the leading churches. Another has devoted himself to the interiors as well as the exteriors, and in this way formed a gallery of pictures which will become more and more interesting and valuable as time passes. A series of views of remarkable houses and buildings of a city would be a source of interest and pleasure to the possessor. These would have artistic as well as historic value.

To the artist the picturesque points of a great city appeal strongly. In order, however, to make a very complete collection of such photographs, the artist should have some one to accompany him, otherwise he may find himself hampered by a crowd of the curious, which will be annoying to say the least. When one has an instantaneous apparatus this annoyance is of course reduced to a minimum, and he is comparatively independent of the curious gaze of the omnipresent small boy and loafer. With such an apparatus, street scenes, celebrations and moving vessels offer few difficulties. The possessor will easily make a collection unique in its way. In a city like New York or Brooklyn, a most picturesque series of pictures can be made along the wharves and among the vessels; and with a little diplomacy a great many favors and much assistance may be obtained from the longshoremen and sailors in getting into favorable positions and finding suitable subjects.

The amateur photographer in the country will find the illustration of his town a work well worth all his energy. Morning and evening, winter and summer, all bring phases which the camera can render with peculiar advantage. If leisure enables him to take portraits he can easily increase his collection by taking the more noted characters; and these if introduced as figures into characteristic surroundings will make a history of the most interesting description. Manners and customs can be illustrated, and picnics, weddings and public gatherings made the subject of photographs.

The traveller has an opportunity to include in his album a great diversity, while

at the same time a single purpose gives unity to his work.

A gentleman in this city has for some time past been illustrating his journeys by photographs taken along the way. The engines which drew his trains, the hotels at which he stopped, views from windows, characteristic scenery along the way, the steamers, the landings and in many cases groups of people have all been worked up into effective pictures which adorn his albums. Summer journeys which, previous to his adoption of photography were mere idle rambles, are now undertaken with a purpose, and new reason is added to each summer vacation, and he brings home with him a record of his tours intelligible to every chance visitor.

To many enthusiasts in photography such organization and systematic labor may seem useless. Their own interest and eagerness seems a sufficient reason for anything they may do. The pleasure of taking a negative, seeing it developed, and printing from it afterwards appears to be a sufficient reward. This is true for a time; but they will find that as months and years pass by, unless some plan is adopted which they are anxious to carry out, their interest will flag to a greater or less extent, and they will perhaps see when it is too late that had they commenced in a different way they would still be obtaining as much enjoyment from their work as when they first commenced.

Process for the Production of Transfers.

PAT. BY H. NICKEL IN CHEMNITZ.*

THE process for the production of transfers admits of the reproduction of drawings with blue lines upon white ground by using the well known tracing paper made sensitive by treating the same with citrate of iron and ammonia and red prussiate of potassium.

The process consists in the production of a negative copy of the drawing to be reproduced, under the application of a par-

* Translated from *Photographisches Mittheilungen* by H. D.

ticular tracing solution, which is done in the following manner:

Take filtered gum arabic, mix with a little vinegar, to make it flow easier and to keep the same from spoiling, and add to this a little soap solution, to prevent the lines drawn from getting brittle after drying. Sufficient india ink is now added to make the lines in the drawing visible. With this tracing ink a copy of the drawing to be duplicated is made in the well known way, taking care to execute the sketch on the rough side of the paper. Upon this same side of the paper so much soft black crayon is now rubbed as the paper will take up. It is best to crush the crayon to a fine powder before using it.

After this is done, the drawing is put into water and carefully rinsed. In this way the lines drawn with the tracing ink will be completely dissolved, and will disappear from the print, upon which the whole drawing in sharp white lines upon black ground is now visible. If this negative is to be used often, it is recommended to coat it with an alcohol varnish or a solution of gum arabic, which will prevent the black crayon from blotting out the white lines.

After the production of such a negative the transfers can be made in unlimited numbers with the sensitive blue (ferro-prussiate) paper with this difference only, that the picture shows blue lines upon white ground, thus enabling a further finishing of the transfer with colors.

Patent claims. The process to produce transfers in blue lines upon white ground by making a copy of the drawing to be reproduced with a tracing ink, consisting of gum arabic, to which is added a little vinegar, india ink and soap solution; by blackening this negative with crayon upon the designated side, carefully rinsing the same with water afterwards so that the whole drawing appears in white lines upon black ground, it will serve as a negative for transfers in blue lines upon white ground.

HURRY up; the first numbers of the BULLETIN for 1884 are nearly all gone.

THE funny man of the *N. Y. Times*, (see BULLETIN for April) has evidently been bitten in the purchase of an amateur photographic outfit, and he tells in a most agonized as well as amusing way the struggles he has had in mastering the art of photography. Evidently he has fallen into bad hands, and the endless directions in regard to developers, toning baths, etc., vex his soul as he cries out that there are at the present time 34,336 different developers, each one of which is seen to produce the most desirable results. He has also wrestled with the different makers of plates, and announces the astonishing fact that there are now 487 different styles of plates in the market, each one of which the amateur is urgently desired to try.

Although he disclaims any knowledge of photography himself, and asserts that its spread accounts for a great increase in the number of insane persons, it is easy to see that he has become a victim himself and is groping about for information. We wonder if he has ever heard of the Eastman plate? Certainly, had he used it, his article would never have been written; he would have found at least one thing that was definite and reliable. And this brings us to the fact that we have recently had an opportunity to demonstrate personally that the Eastman plate is rapid to a degree quite beyond anything which we have heretofore seen. In our case recently it seemed that the shortest exposure which could be made with a cap was by far too long for the best effect, and considerable restraining was necessary in the development.

Come and See Them.

MR. J. H. KENT, at our request, has kindly sent us some specimen photographs made with the Dallmeyer rapid rectilinear lens, on Eastman's special plates. The prints are on Hovey's albumen paper, and consist of portraits of children and adults, varying in size from 18 x 22 down to panels. We have placed them on exhibition in our store, and cordially invite the fraternity to call and see them.

Studies and Experiments with Gelatine Emulsion.

BY DR. EDER.*

Green's Polishing Powder.—This consists of washed infusorial earth (silicious earth), and polishes glass without scratching the surface so well, that the gelatine emulsion flows as smoothly as oil. Dr. Stolze has recommended this powder repeatedly, and my experiments tend to give it the preference to that of tripoli. Silicate of potassium is unnecessary after polishing with this powder.

Different baths, to change or reduce the color of gelatine plates, particularly such as have been developed with pyrogallie acid.—Besides the alum baths, acidified with citric acid or muriatic acid, and in use for a long time, iron salts are used at present.

In June, 1883,† for the first time I drew attention to mixed alum and sulphate of iron baths, which change the color of pyrogallie plates from yellow brown to a dark brown.

Edwards made and also recommended it as follows: 1 part of alum, 1 part of citric acid, 3 parts of sulph. of iron and 20 parts of water (about the same as my compound.) With this solution the fixed and washed plates were flowed. In a few seconds the color will change *without losing density*. The negatives print well.

To this I might add that I obtained also good results from a solution of ferrous alum (sulphate of iron and alumina), although this preparation has not yet been used in photography.

Hanson gave several formulas—modifications of existing ones—which clear and reduce the negative:

	No. 1.	No. 2.
Sulphate of iron,	2 parts.	3 parts.
Alum,	1 “	— “
Chloride of iron, .	$\frac{1}{2}$ “	— “
Ferrous oxalate, .	—	$\frac{1}{2}$ “
Water,	20 “	20 “

He remarks that sulphate of iron hardens the gelatine and prevents frilling. No. 2 is more reducing than No. 1, and both remove yellow and green fog.

If the green fog cannot be removed by the above means, I would recommend, from my own experience, Hanson's third solution—

Bichromate of potassium,	3 parts.
Sulphuric acid,	120 “
Water,	1,000 “

This solution is used after fixing, and requires perfect control in its application. To cause a uniform reduction of over-dense negatives—developed with iron or with pyro—Farmer recommends a bath of a strong fixing soda solution, to which is added a few drops of a saturated solution of red prussiate of potash. According to the quantity of the latter a reduction takes place. *The color changes very little, or not at all.* I can recommend this process from my own experience, because its action can be governed. The mixed solution keeps for one day, but leaves a sediment afterwards.

The reducing process is: Formation of ferrocyanide of silver, which dissolves in the fixing soda.

This formula acts similarly to the well-known chloride of copper, but I prefer it to all copper baths on account of its extreme convenience and safe manipulation. It is true that after prolonged action it will affect the fine half-tones (similarly to chloride of copper, chloride of iron and ferrous oxalate), but it can be applied to plates developed with either pyro. or oxalate of potassium.

A good chloride of copper reducer is the formula given by John Spiller. Two solutions are used:

A. Water,	1,200 parts.
Alum,	120 “
Sulphate of copper,	120 “
Chloride of sodium,	240 “

bad cases of yellow fog, which cannot be removed by muriatic acid, alum is recommended as follows: Three parts of muriatic acid and seventy parts of a saturated alum solution.

* Translated from *Photo. Correspondenz*, by H. D. for ANTHONY'S BULLETIN.

† In the *Photographic News* (1884 page 66), for

This is dissolved and filtered.

B. Cold saturated aqueous solution of chloride of sodium. Before use mix equal parts of A and B and plunge the negative into the same. In obstinate cases take more of the copper solution or the copper only. When the desired degree of transparency is obtained, wash well.

Sulphate of copper and chloride of sodium form, as is well known, chloride of copper, which affects the silver. Chloride of sodium dissolves the chlorate of copper which has been formed.

The reducing bath of oxalic oxide of iron-potassium mentioned by Belitzki, and preferred by him to the copper solution, acts very well with negatives that are to undergo a *uniform reduction*. It is produced by dissolving 10 grams of oxalic oxide of iron-potassium in 100 c. c. of ordinary hypo. solution, as used for fixing.

The yellowish solution reduces the picture after a few minutes. With a prolonged action the finer parts of the image will of course disappear, and after several hours it will be destroyed entirely.

For such cases I would give Farmer's process with red prussiate of potassium the preference, and it has the advantage of never producing a discoloration.

Observe well, all these formulas by excessive action make glossy and hard negatives, although not in the same degree as cyanide of potassium. The only bath which reduces and always gives *softer pictures* is my well known cyano-bichloride of mercury reducer.

Hyposulphite of soda as accelerator in the oxalate developer.—In Dr. Stolze's highly interesting sensitometric studies concerning the accelerating action of the fixing soda is mentioned the fact, that it makes a reduction in the exposure of twenty per cent., i. e., that it requires only four seconds' exposure instead of five. Regarding this I will communicate some data from my experimental lists. The accelerating action of the fixing soda differs materially in emulsions of different preparation.

I possess plates which give fourteen to fifteen numbers of Warnerke with the pure

oxalate developer, but with a few drops of hyposulphite of soda solution and a little bromide of potassium, they give seventeen numbers of Warnerke.

The sensitometer number rises two-fold; the camera sensitiveness three and four times, because the density of the higher numbers increase.

Such conditions oftentimes show unripe bromide or bromo-iodide emulsion cooked too short a time; particularly emulsions which were cooked or digested with *much* gelatine.

In return I have oftentimes had emulsions in which hyposulphite of soda in the oxalate developer had little or no effect. These were mostly emulsions which, greatly diluted (with little gelatine), were forced with ammonia to the maximum ripeness. Badly washed emulsions, or those made with bromide of potassium, showed in all cases known to me an accelerating effect of the hyposulphite of soda.

Comparison of the pyro. and iron developers.—The question, which of the two is best, that is, gives stronger pictures or allows a shorter exposure, cannot so easily be determined.

Many plates give with pyro. a larger sensitiveness and good strength; with oxalate of iron very thin weak pictures, for instance emulsions with much iodide of silver (*f. i.* 10 per cent.), made in high temperature; also emulsions which were made by the cold process, with very little gelatine (similar to Henderson's emulsion), and digested for a long time. Other emulsions suit better for the oxalate of iron developer, for instance, Monckhoven's plates; and also any ordinary emulsion with ammonia oxide of silver (digested with a full quantity of gelatine.)

General rules cannot be established, but it is certain that the kind of development depends entirely upon the preparation of the plates. This extends so far that the dry plate manufacturer has even to be guided by the style of development prevalent in the different countries, whereas some large and prominent manufacturers again have caused whole countries to use or give

at least the preference to one or the other developer.

It is not difficult to trace this, and as the correctness of the aforesaid is demonstrated, that, for instance, in England and America the pyro. developer, in Austria, Germany, France, Belgium and Switzerland, the oxalate of iron developer, predominates in portraiture. The export of dry plates from one to the other of these countries is very limited.

"Follow my Leader."

IF there is one thing more difficult than another for the photographic teacher to instill into the mind of the amateur, it is the necessity of observing to some extent the directions which are given.

One of our friends recently came into our office bringing with him an exceedingly sulphurous atmosphere, at the same time making remarks which were certainly not theological in their tone concerning certain plates and the directions which had been given him. We mollified him as far as possible, ventilated our views and attempted to investigate the cause for the reprehensible action of these otherwise unimpeachable plates.

Considerable circumlocution was required to reach a description of his method of operation, but at last he consented to give it in detail. It was unique, to say the least, and consisted of mixing all the solutions called for, commencing with the pyro. and soda, then adding the alum and finally the hypo in one bath, into which the unfortunate plate was plunged when it came from the camera. It is unnecessary to say that the atmosphere was blue for a few moments, but our friend was not responsible for its cerulean tone.

Another amusing case happened one day last month, when a juvenile amateur coolly protested against our preventing him from holding a plate dripping from the hypo. solution over a bath in which another plate was developing. He said he had never used more than one tray, and did not see as it made any difference; judging from his negatives, it didn't. When he had fin-

ished developing he poured the hypo. into the same pan, and when the plate was fixed poured the hypo. out and commenced with the developer again.

How he had ever made a negative is more than we can understand, although he has produced several very presentable pictures during the past few weeks. The only explanation that we can offer is that he is an amateur, and what they will do and won't do "no fellow can find out." Before our young friend left our office we had impressed him with the necessity of having two trays, one for developing and one for hypo, and also the importance of keeping his hypo. by itself, and not allowing it to contaminate the other solutions.

Even such experiences as these do not always teach an amateur that he must follow directions. Too often we find them reading the instruction book before they purchase their outfit, and then beginning work without any further study. To take a good picture is impossible without following closely at every step the directions of the printed manual. An amateur in Brooklyn one Saturday afternoon sent to us for an outfit complete, and on Monday astonished us with a negative which would have done no dishonor to a professional landscape photographer. As he had never known anything of the art—had had no aid nor instruction—we asked some questions. His answer is worth remembering. He said, "I took the book, kept it open before me and followed every direction that was given from first to last."

The open instruction book in the work room, by the side of the camera, and in the hand while making up the solutions, is the great safeguard against error, and half of the amateur complaints come because the books have been neglected and instructions forgotten.

Correction.

IN the report of the Chicago Photographic Society, on page 123 of the March number, in the second column, twelfth line from the top, the word "contaminating," should read "continuating."



Sarony

IF you should ever step into Sarony's Art Gallery in New York you will possibly see a little man in a red fez hopping about with the life and agility of a school boy.

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That is Mr. Napoleon Sarony, whose name is quite familiar to all intelligent Americans, and who has done more to elevate the art of photography than any man on this or the other side of the Atlantic Ocean. He

is not simply a photographer—he is an artist by nature and by habit, full of enthusiasm and the divine fire, and always finding his greatest happiness in the sentiment of life rather than in its materialism. For many years he has been one of the foremost members of the New York Tile Club, and he also belongs to the Salmagundi. He has all the originality and oddity of a born genius. Some people call him eccentric, but he is not, he is simply unlike anybody else. His establishment is a notable museum. The waiting room is probably one hundred feet by fifty in size and is crowded in every nook and corner with a curious collection of paintings, crayons, relics and antiquities. In one end of the room stands the plaster cast of a most striking group representing Columbus discovering America. It was modeled by a poor Italian, and will no doubt be some day put into bronze. In one corner is a chair brought from the Holy Land, and not less than a thousand years old. In fact, it looks as though Agrippa might have used it in the trial of Paul, the Apostle. By the entrance door is an Egyptian mummy case with a dried up mummy inside that might have died of one of the plagues sent against the obdurate Pharaoh by Moses and Aaron. There are, also, gods from India and China, old armor from Japan, idols from Central America, guns and pistols from Arabia, Morocco and Turkey; helmets from France in the time of William the Conqueror, suits of mail from England in the time of Richard Cœur de Lion, and choice lots of bows and arrows, tomahawks, knives, and clothing used by the foremost tribes of the American Indians. There is, also, a striking picture of a "Nubian Serving Woman," by Chase, and an intense painting just opposite, representing a jealous Florentine wife of the seventeenth century, viewing the head of the mistress of her faithless husband. Mr. Sarony himself is generally found at work either in his operating room or in his "den," as he calls it. This "den" of his is on the third floor of the building, and is about ten by twelve. It is the queerest place, and it is not everybody who gets in

there. It is here where Mr. Sarony does his truly artistic work—gets rid of the surplus inspiration after the dry drudgery of photographing people. Here are his easel, his crayons, his colors, and his brush; and here are the draperies he uses on the life models he is 'so fond of working from, and the half-completed pieces that he has already commenced, as well as a few complete sketches that he shows only to his friends. All the great actors and actresses who patronize Mr. Sarony so largely are fond of him and like to see him in this precious "den." Neilson was there many a time. Mary Anderson has been there. Sarah Bernhardt, Ellen Terry, Booth, Irving, Nilsson, Patti, Campanini and Fanny Davenport. It is not surprising that the dramatic profession like him. He was the first photographer to make his pictures so beautiful, and at the same time so artistic in pose, that they could be used extensively in advertising. He is the only man in the country who could have dared give Sarah Bernhardt and Mrs. Langtry \$1,500 each for the exclusive right to print and sell their photographs in America. He did it and made money by it. There are two reasons why Mr. Sarony has been a successful photographer; first, because he has a knowledge of artistic attitude and drapery; and second, because he is such an interesting person, and so agreeable withal that the sitter is always put into the best of humor and therefore given the truest and most satisfactory expression.

Mr. Sarony's father was a German, and a member of the famous Black Huzzars, who fought Napoleon at the battle of Leipzig. Though on the opposite side and belonging to a regiment that showed no quarter, he formed a great admiration for the generalship and soldierly qualities of Napoleon, and therefore the name Napoleon Sarony. It further happened that the boy was born the same year, 1821, that the First Consul died. The elder Sarony came out to Canada after he left the army, and the son was born at Quebec. The father died when the boy was twelve, and left him to struggle for himself. At that age he came

down to New York, and commenced in that great city to do for himself, having neither money nor friends. He had a taste for drawing, and got a start in a lithographing establishment. Lithography was in its infancy then, and Mr. Sarony did more than any other man in America to make it attractive and commercially valuable. He made a fortune at the business, and sold out and went to Europe, where he was during the greater part of the American civil war. By some ill-luck he lost a great deal of his money, and set up a photographic establishment in England, but soon returned to New York, where, in 1865, he commenced to make his second fortune and greater fame. He has a way about him so open and frank, and a nature so warm and enthusiastic that he will never grow old in manner, and will always be a most entertaining and congenial gentleman. J. R. R.—*The Spectator*.

Photography on Wheels.

BY C. G. CUTCHEY.

No doubt the readers of the Journal will think this article a little "behind the fair," as we are now beginning to think of packing up our traps for the winter, the short days and long nights warning us that photography must soon be a thing of the past so far as 1883 is concerned. But then we have 1884 to think of and provide for. Besides, in these days of gelatine plates, cold weather does not affect us much, and many a charming scene is to be secured in the winter.

Which of us living in the country, waking up some cold wintry morning, looking out of window and seeing the lovely tracery of hoarfrost on the trees, does not sigh for an opportunity of running a little way out into some sheltered lane or clump of trees, and trying to snatch a picture of the beautiful lacework hanging from the branches? But, then, oh bother! though my camera and slides are ready, they are so heavy how am I to take them there? I have no trap. True, I might use the wheelbarrow or even the perambulator; but, then, oh, shades of mine uncle!

what would neighbor So-and-so say if he saw me? So my readers will see that I am not quite out of season even now in suggesting a ready means of getting our apparatus to the spot, so that a picture may be secured of some of these charming bits of nature's handiwork.

Now to my text—that is, a practical way of carrying camera, etc., to "fresh fields and pastures new." I think our new friend the tricycle comes readily to our aid; so, presuming we have our camera-backs, lenses, and tripods ready (and these together weigh say twenty-five or thirty lbs.), our friend the tricycle will carry them, and, if we choose the right machine carry them easily. But, then, which *is* the right machine? Ah! "there's the rub," and a problem I cannot say I have solved, but will give you my experience.

For a long time I had been looking out for a good luggage carrying tricycle, and at last seeing two rather strong-minded young ladies in my neighborhood (near Epping Forest) often pass my door on their way to London on what, to me, seemed a good, sound, useful tricycle, and frequently with a moderate-sized portmanteau strapped at their backs—on the tricycle, of course—now, thought I, Eureka! I have found it. So I was rude enough one day to stop these young ladies and ask them a few questions, which they readily answered, and a day or two afterwards called upon me and placed in my hands *The Tricyclists' Indispensable Annual*. This annual has a full description and illustrations of nearly every machine made (between two and three hundred). This I carefully perused, and came to the conclusion that these young ladies had found out the machine that would answer my purpose, namely, to carry myself and apparatus across the country, and render me independent of railways and fly-masters.

So I purchased a Coventry convertible tricycle, and find it a most handy, safe, and useful machine. It will carry me and my apparatus, either as a single machine, or, should I wish for a companion or assistant, I can, in one minute, convert it into a double machine. This is done by attaching

what may really be called a second machine by means of a pin and two nuts. Thus I can have an assistant, or, should I prefer it, the companionship of "a sister, cousin, or aunt," so making my run one of pleasure as well as of business.

The machine is twenty-nine inches wide as a single, or "Coventry Rotary" as it is then called, and fifty-nine inches as a double, or "Sociable." The driving wheels are forty-eight inches high, and one of its best qualities, so far as we are concerned, is that it has two steering wheels—one back and one front—thus rendering it safe so far as "croppers" or "back throws" are concerned.

And now as to its luggage-carrying qualities. It has a long steel tube to which these two steering wheels are attached, and a "stay" runs from the axle to the hind wheel, thus giving a good platform to carry anything on. A light basket lined with a water-proof material, made to hold the apparatus, and strapped to the back of the seat and resting on this platform, is all that is necessary. I may add that it has very powerful brakes to both wheels, so that it is a safe hill-climber, and, when in proper going order, a fast machine, an average of eight miles an hour being easily got out of it. I have no doubt there are many machines as good, or better; but I have not been able to find one so well adapted to our purpose as this.

In recommending a tricycle, I do so as not only can it be used for business purposes but also for pleasure. It is easily learned, and after a little practice thirty or forty miles a-day can be easily run, and that with less fatigue than a walk of eight or ten miles would entail. I often run ten or fifteen miles of an evening, and our roads are anything but level; and, though expensive (about half the cost of a neat little horse and trap), it does not require a stable, being easily stowed away. If not used it does not cost anything to keep, while after a run there is no horse to groom, feed, and bed.—*British Journal of Photography.*

TROPICAL Dry Plates never frill.

Foreign and American Instantaneous Photographs.

THE foreign photographic journals in recent comments upon the high quality of American instantaneous photographs have in many cases attributed their excellence to the superiority of the daylight in our bright atmosphere.

Having recently seen a number of very fine foreign instantaneous views, we were led to examine them somewhat critically in order to determine, if possible, in what direction their superiority was to be found. The Americans whose work we examined were men whose excellence places them among the first photographers of this country, and in every case we took special care to select the best specimens we could find. This we considered perfectly fair, because samples from abroad were evidently selected and as good as the artists were able to produce.

In judging work of two different artists it is but fair to select samples which, as far as possible, were taken under similar conditions of light and shade and speed of motion. To compare groups taken on the sands of a watering place with the surf lazily breaking, with a yacht pitching in a heavy sea on a cloudy day, is manifestly unfair, and it would be equally absurd to place side by side a picture looking squarely across Broadway at a busy hour and a group of Jerseys lazily strolling toward home on a bright summer afternoon. The aspen leaf drowsily twisting in a zephyr in August presents none of the difficulties met with in a flag snapping at the mast-head in a November gale. It is easy enough however to find subjects sufficiently similar to enable one to make a fair comparison and to understand the strong points of any photographer in instantaneous work.

Sharpness of definition, especially in dark objects, gives a key to the power of the lens, while the definition of rapidly moving objects shows something of the character of the shooter and the perfection of its operations.

Through the kindness of Mr. C. Miller

we were enabled to examine the pictures critically, and among them were a number by Mr. Herm. Priester, of Hamburg. Part of these measured $4 \times 5\frac{1}{2}$ inches and part were $5\frac{1}{2} \times 8\frac{1}{2}$. Among the best of them was a picture of a cutter passing squarely across the line of vision, at no great distance. The picture was taken from the lee side, apparently on a day in which there was no bright sun. From the top of the bowsprit to the end of the main boom the boat measured six inches long on the photograph. This was one of the best things in the collection, and was pretty sharp, but there was a considerable amount of blur, and the lack of definition was very noticeable. The hull was simply a black silhouette and absolutely without detail.

From an artistic point the pictures were all good. The compositions had been closely attended to—grouping of boats was fair, above the average in instantaneous work. In none of them, however, were all the details brought out. The folds of the flag were noticeably soft, but at the outer end were lost in the sky.

The next collection was made by Mr. Gubelman. They measured $8\frac{1}{2} \times 4\frac{1}{2}$. The first one which could be fairly compared with the foreign group was of the *Bedouin*, and three other yachts standing square across the line of sight, and driven by a brisk breeze. Here the details were sharp and the whole picture was bright and crisp to the edges. It was, however, hardly a fair comparison, since the light was evidently considerably better. A picture of the *Estele*, passing quite as near as the cutter in the foreign group, was a marked contrast to them. In fact it was beyond comparison better. The details were clear and even, and the dark hull came out well, while the rigging, the details of the sails, etc., were quite as good as could be wished. The shutter was evidently rapid enough to practically stop the vessel while the picture was taken, the lens was fine enough to get every detail sharp, while the plate was rapid enough to give a good black negative with the shortest possible exposure.

One of the most remarkable marine

views was shown us by Mr. Rockwood. It was taken by himself on a 14×17 plate, and the sloop yacht which it represents was passing diagonally away but at very short range. From the top of the topmast to the stern of the vessel, the longest direction of the plate, the image measures ten inches.

Along side of this, Mr. Rockwood showed us a number of pictures $7\frac{1}{2} \times 9\frac{1}{2}$ of ships saluting on Evacuation Day. The details of their hulls even in the dark shadows were well brought out, the form of the smoke clearly seen, and the flags, even those which were flapping most rapidly, were clear and sharp to the very outer corners.

Perhaps it would be expected in this comparison between foreign and American work that we should make some allusion to pictures of steamers moving at 18 or 20 miles an hour across the field of vision at no great distance. We should do so, but for the fact that most of these pictures by Gubelman have been taken under a much better light than the foreign pictures, and the subjects have been almost invariably light-colored, hence the advantages in favor of the American artist were considerable. Mr. Gubelman's pictures of ocean steamers, which show detail, may be fairly compared with the foreign work, for their speed at the time the photographs were taken could hardly have been less than twelve or fourteen miles an hour. Some of these on cloudy days have presented as great sharpness as any of those which we have seen, particularly those from Pollock's, of Boston, which really deserve mention in this connection, standing as they do with the foremost in their artistic and photographic excellence. We might be charged by our foreign friends with injustice, since most of these pictures have been taken with exceptionally fine lighting, and a cry of difference in climate would at once be made. We may be pardoned for boasting of some of those, and also some of Mr. Cooper's work taken under the greatest difficulty in the way of bright light which we ever remember seeing. One of Mr. Cooper's Newburgh pictures was taken facing the sun—a sheet of sunlight falls directly on the water toward

the camera—yet the shadowed sides of a group of vessels lying in these sheets of light were clearly defined. Such a feat we think would puzzle our foreign friends, who are ever ready to complain of a lack of daylight in their work.

Plates and Developers.

To every amateur who has had trouble with plates and developers, we would suggest a line of work which will probably result in giving him more knowledge than he possessed before, and will be very likely to make a very decent photographer out of him.

First let him go to some photographic artist of his acquaintance and ask to see a good dry plate negative, look it all over, take account of the depth of its color, its intensity, and in fact every particular in regard to it. Then let him go home and try to make such a plate. His first attempt will be a failure, no doubt. But let him take his negative and at his leisure study it with all the circumstances which were involved in its production, premising, of course, that his developer has been mixed according to some formula applicable to his plates. Let him stick to his developer, and perhaps stick to his proportions until he finds what light will give him the best results with it. In this case the light will be varied and the developer constant. When he has found what exposure and light are best, let him begin by assuming a constant light and exposure and varying the developer, so as to obtain different kinds of negatives with a fixed state of conditions in the picture making.

Before he has run half way through this series of experiments he will find that his lesson has been learned, and he knows how to make a plate where the exposure, the light and the development are variable.

The question at once arises where can one find a constant light? This is certainly somewhat of a puzzle in such weather as has prevailed during the winter of 1884, but something which is nearly equivalent to a constant light may be found in taking

the same landscape over and over again on a pleasant day. This will answer every purpose, and some of those gentlemen who have been working without reading these instructions a second time will find such practice very useful.

The Development of Over-Exposed Plates *

HERR A. HUGARDON in Geneva has drawn our attention to an interesting discovery of Mr. E. Sautter, an amateur in Geneva, which admits of the development of plates which have been over exposed 180 times too much. We have seen such a negative and received the following details as to its development.

It was a very bright day, two o'clock in the afternoon; the picture was made upon a plate 13 x 16 c. c. m., with a Dallmeyer rapid rectilinear lens, using a diaphragm of 8½ m. m. in diameter. The normal exposure would have required two seconds; the actual exposure was six minutes. The plate was soaked from one to two minutes in a 10 per cent. solution of bromide of potassium, and, *without further washing*, put into the ordinary oxalate developer, to which were added a few drops of a fifty per cent. solution of citric acid. The fixing as usual. The plates—Monckhoven's—did not frill under this treatment, but this does not prove that other plates might not frill. Mr. Sautter gives the assurance that even with a still longer exposure he obtained good results, and draws attention to its value, particularly for amateurs, who especially in open air are apt to over expose.

Mr. Stolze, the editor of the *Photographische Wochenblatt*, says regarding the above: We have hardly anything to add, the process speaks for itself. The picture—an impression upon gelatino-chloride of silver paper—shows the deepest and most brilliant shadows, while it is known to every photographer that, by the ordinary method hopeless fog would have been the unavoidable result of such an over exposure.

* Translated from *Photographische Wochenblatt* by H. D.

Particularly tourists, who expose their plates without the necessary experience, and who send them home for development, will not lose the fruit of their labors. To emulsion photography is thus gained another advantage, which is invaluable; but to Mr. Sautter, belongs the credit of having enriched us with this process.

Rochester Photographic Association.

MARCH 24, 1884.

A REGULAR semi monthly meeting of this Association was held Monday evening, March 1824, 84, President J. M. Fox in the chair.

Mr E. ROCKWOOD, of New York, was introduced to the members by Mr. Wardlaw.

The PRESIDENT announced the subjects for discussion—the carbonate of soda developer; what are its advantages over the plain pyro. and ammonia?

Mr. NELSON. Can as much latitude be given with soda as with the pyro. and ammonia?

Mr. JAMES INGLIS said he had had but limited experience with the carbonate of soda developer; therefore was no great authority. He had tried Mr. Cooper's formula, and at first was very much impressed in its favor, because of the continuous action it had upon the plate. He could notice development go on as long as his patience would last.

Mr. WARDLAW had tried the carbonate of soda developer in connection with the sulphite of soda. He liked the developer very well. The tone of the negative was very good, although not quite the color he preferred. The formula he had used was Mr. Cooper's, as follows:

Solution No. 1.

Sulphite of sodium crystals, $\frac{1}{2}$ pound.
Distilled water, 2 quarts.
Pyro., 2 ounces.

Solution No. 2.

Washing soda, $\frac{1}{2}$ pound.
Water from tap, 2 quarts.

Mr. MONROE said he had been engaged lately in experimenting with the carbonate

of soda developer and had found that some of the formulas for that developer are compounded for some special make of plates, and work well on one brand but not on others. His effort had been to find a formula that while working well on his own plates will work equally well on all others; and as no bromide restrainer is used in this formula, it is possible to make it a universal developer. In saying that no bromide is used, he meant that it is not in the normal developer.

Mr. EASTMAN said in regard to the claim of carbonate of soda bringing more out of a plate than ammonia, he had never seen the claim substantiated, although he had frequently seen it tried.

Mr. MONROE thought there was a great difference in the quality of carbonate of soda; that sold as sal soda being inferior to the pure article now furnished by the leading stock houses in New York;* it costs but little more and develops with finer gradations and has less of the objectionable olive-green color; and he also believed that more detail can be brought out with carbonate of soda than with ammonia.

Mr. WARDLAW. Whilst carbonate of soda in connection with sulphite of soda and pyro. would undoubtedly keep clear longer than pyro. and ammonia, yet its developing properties change just as quickly if not more so than pyro. and ammonia. Where the soda developer is just right for the first plate, it will work hard for the second. This is more noticeable if a little time intervenes between the developing of the plates. I think the claim for the soda developer bringing out more detail and at the same time producing a stronger negative, is a mistake; for example, if your negative grows strong quickly, you must remove it from the developer sooner, often before sufficient detail is brought out; but in using pyro. and ammonia, while giving all the intensity required, it allows the detail to get well out before the negative grows too strong. A little addition of bromide to the developer will keep back the

* Anthony's pure crystallized carbonate of soda.

shadows if there is an appearance of over-time, and allow of building up the strength of the high lights.

Mr. INGLIS said the color and clearness was all that could be desired in a negative. Its color was due to the sulphite of soda, which while used in connection with soda, or ammonia, or any other developer, would be the same as far as the color goes; it is in no way due to the *carbonate of soda developer*, as is well known by the exceedingly yellow films produced by the plain carbonate of soda developers. He found some plates had a greater tendency to show fog in the development with the carbonate than with the ammonia developer. A friend writes not to send him any more developers. He had made an instantaneous exposure and one with 10 seconds, and produced identical results, thus showing the latitude and power of the ammonia developer.

Mr. INGLIS here exhibited several photographs made with a drop shutter in the skylight room, by a formula he had used in wet plate times. He said he had never seen dry plates that would work quicker.

Mr. WARDLAW. How about your plates marked 25 times quicker than wet plates?

Mr. INGLIS. They were no quicker than these.

Mr. MONROE. Then they should be marked *one time*

Mr. WARDLAW requested Mr. Rockwood to give his manner of developing dry plates.

Mr. ROCKWOOD said the formula he used was one taken from the BULLETIN, and was as follows:

No. 1.

Pyrogallie acid,	1 ounce.
Citric acid,	60 grains.
Sulphite of soda,	1½ ounces
Water,	12 "

No. 2.

Epsom salts,	3 ounces.
Water,	8 "

Use half an ounce of each in twelve ounces of water.

This formula he said worked excellently

in his hands, the negatives developing with wet plate effects; and on the whole it was easily worked.

Mr. LEE. Mr. Rockwood in his remarks speaks of dry plate negatives having all the beautiful effects of the wet plates. Are wet plates still the standard?

Mr. R. said: I have yet to see the best wet plates excelled; he had not yet seen them equalled. If you can show me any dry plate negatives that are ahead of some of the best wet plate ones, you can *take my hat*.

Mr. INGLIS. Then I am afraid you would have to go home without your hat. Milwaukee proved conclusively the superiority of the dry plate, and that the wet plate is a thing of the past. Several prominent wet plate workers who exhibited were quite eclipsed by the dry plate workers.

Mr. ROCKWOOD said that while he stood by his previous remarks, he did not wish to be understood as advocating wet plates. For his work he would use dry plates, for their many advantages over the wet; one could procure pictures with dry plates that would have been impossible with wet plates.

Mr. MONROE. The formula which I have, although not wholly original, is arranged to embrace simplicity in use together with economy and desirable color. I also find by using sulphurous acid instead of sulphuric (although it takes more), the solution does not change on exposure to air; it can also be used on a dozen or more successive plates, and by pouring it back into a bottle and corking it, no scum can form on the surface, thereby enabling one to use it several hours after mixture. This is the formula.

No. 1.

Sulphite soda, (cryst.) . .	4 ounces.
Hot water,	11 "

No. 2.

Carb. soda (pure),	3½ ounces.
Sulphite soda,	½ "
Water,	64 "

When dissolved and cool add three and

a half to four ounces of sulphurous acid, (sufficient to show red by testing with litmus paper) Pyrogallic acid (dry) 1 ounce; then filter. To use take one dram of No. 1 to each ounce of No. 2, and by using more or less of No. 1 any change in density may be secured

Mr. INGLIS. Having heard so much in favor of the carbonate of soda developer, I am inclined to believe that for general work it is excellent, especially for short exposures, and that I could bring out more with it than with pyro. and ammonia.

Mr. EASTMAN. I was quite favorably impressed with the negatives produced with the carbonate of soda developer and thought them somewhat superior to ammonia and pyro. developed negatives, but on subsequent comparison I found that the pyro. and ammonia developed negatives were ahead.

Mr. INGLIS. I have found that with the carbonate of soda I can get greater density than with ammonia in its normal state; of course any degree of density can be had with ammonia as well, by using more or less bromide. Mr. Inglis gave his carbonate of soda formula, as follows:

Saturated solution of sal soda, 2 drs.

" " sulphite soda, 1 "

Water, 3 ozs.

Add dry pyro. 4 to 5 grains.

Mr. MONROE said if (in using his formula) the plate is found over-exposed, pour over it a solution containing two per cent. of bromide of ammonia; then without washing place it back again into the developer. Any degree of density may be obtained.

Several topics will go over for next meeting. The thanks of the Association was voted to the editors of the BULLETIN and *The Eye* for copies of those journals.

The meeting then adjourned.

W. J. LEE, Sec'y.

APRIL 21, 1884.

A REGULAR meeting of this association was held at their rooms cor. State & Church

Streets Monday evening, April 21, with the President, J. M. Fox in the chair.

Mr. JAMES INGLIS said in answer to the question, "Is it better to use quick or slow plates in taking views," that he was of the opinion plates could not be made too quick. In England plates to be exposed six seconds sold for about double the price of plates requiring twenty seconds' exposure, proving that English photographers preferred the quick plates.

Mr. MAWDSLEY was decidedly of the opinion that the rapid plates were preferable for viewing.

Mr. NELSON said that in taking a view in a village street, for instance, he preferred a longer exposure without any moving objects

Mr. MAWDSLEY thought it preferable to take a street view with moving objects, which could be easily done with quick plates and a drop shutter, and the picture he thought would be much more attractive. Several other members gave their views briefly.

The PRESIDENT inquired as to the experience of members in silvering paper and removing the surplus silver from the sheet by drawing it over a glass rod. He could detect no special difference when printed.

Mr. INGLIS had had good success with blotting-paper after it was silvered.

Mr. WARDLAW had succeeded best by removing the paper from the silver bath slowly and allowing the surplus silver to remain on the surface.

Mr. NELSON was of the same opinion, and he also thought that there was liability to mottling.

Mr. GODFREY did not think as fine prints could be made if the surplus silver was removed from the paper.

Mr. WARDLAW asked if it would not be a good plan to remove the surplus silver by washing the paper after silvering.

Mr. NELSON had seen several articles recently advocating the washing of silvered paper by drawing the sheet through a pan of water after silvering. He had tried it and found the plan worked well on general principles.

The PRESIDENT inquired the experience of members regarding the fuming of paper and the proper length of time to fume. He had sometimes been obliged to fume an hour and a half.

Mr. NELSON suggested that the dish be warmed slightly during the operation.

The PRESIDENT said the paper he used would not print properly with less fuming.

Mr. WARDLAW. You did the mischief with your little rod.

Mr. GODFREY. The time of fuming depends on the weather. A hot brick placed under the dish containing the ammonia in cold weather would facilitate the process.

The PRESIDENT said he knew a practical photographer who fumed two hours.

Mr. NELSON favored long fuming; he had never seen paper over-fumed.

Mr. WARDLAW said he had seen pictures a cold steel blue from over-fuming.

Mr. NELSON fumed 45 minutes in winter and 30 minutes in summer.

Mr. WARDLAW. Then I suppose you work by the calendar instead of the thermometer. For my part I prefer to silver and fume albumen paper as the temperature shall decide. He had lately been experimenting with good success by a formula for reducing strong negatives. He used about one grain of permanganate of potash to six ounces of water and one or two drops of nitric acid. He thought the formula when properly used would assist many who made strong negatives to reduce them.

Mr. LEE had tried the above plan and found it did the work of reducing well.

He had also used it for removing the stains of pyro. from the hands and found it excellent; it leaves no stain of its own.

Mr. WARDLAW thought the proportions might have to be varied slightly, but he had used those given above.

Mr. MARCEAU, (who has lately returned from South America) gave some interesting facts in regard to photography in that country. He had found that as good pictures were made there as here; and the photographers are very expert in working dry plates, which they have used for upwards of a year and a half. A majority of them

are of English manufacture; still American plates are used also.

Mr. INGLIS inquired if the climate was not adapted to quick exposures.

Mr. MARCEAU said that they seemed to be about the same as in working here, but 320 days out of the 365 are clear in Chili.

Mr. INGLIS did not want such very bright sunlight.

Mr. MAWDSLEY agreed with Mr. Inglis. He thought light, fleecy clouds in the sky gave a better effect.

Mr. INGLIS had found an agreeable roundness in the views taken by Wilson of Aberdeen. He inquired if English photographers did not take more pains to procure landscapes than American.

Mr. WARDLAW had seen some Oriental views taken under a cloudless sky with fine effects.

The PRESIDENT said the English seemed to do more in landscape work than is done in this country.

Mr. MARCEAU, in conversation with a prominent London photographer, had learned that most of the landscapes taken in Great Britain were made by amateurs, and they had leisure to wait for the best conditions, such as a proper light, for instance. He supposed in this country, where photographers made a business of viewing, they were in more of a hurry.

Mr. WARDLAW had seen some interiors taken by amateurs who were members of this Association, and they were fully equal to the best work of many of the professional photographers.

Among the questions to be discussed at the next meeting, was the following, "What is the best shutter for portrait work in the skylight?"

After the usual routine business was transacted the meeting adjourned.

W. J. LEE, Sec'y.

Copies of the BULLETIN thankfully received.

MAY 5, 1884.

THERE was a good attendance at the regular meeting of the Rochester Photographic Association on Monday evening, May 5. It being the semi-annual meeting, the

election of officers was first in order, and resulted as follows :

President, J. M. FOX.

Vice-president, CHARLES T. POMEROY.

Secretary, WILLIAM J. LEE.

Treasurer, S. D. WARDLAW.

After a short recess, during which the members examined a detective camera, two or three different shutters and other photographic appliances, the questions for discussion were taken up. The first question was—What causes the large blisters?

Mr. BOSTWICK thought placing the prints in a solution of hypo. which was too strong produced them.

Mr. HOOVER. The blisters are caused by a change in temperature. A hypo. bath should be mixed the day before it is used. The blisters are formed by the action of gas occasioned by a change of temperature.

Mr. WARDLAW. I think the hypo. should be dissolved and left in the dish at least twenty-four hours. I have noticed that when the blisters are taken off, the albumen has the appearance of having been stretched.

Mr. NELSON. In my experience I find that there is always a break in the paper back of a blister. I cannot tell whether the blister causes the break, or the break causes the blister.

Mr. INGLIS. Blisters are usually found on double albumenized paper. Some kinds of paper are more apt to blister than others. Something in the albumen seems to cause the formation of gas.

President FOX. I have made experiments with four kinds of paper; three blistered, and one did not. I think the use of acetic acid after the prints are taken from the soda bath will prevent blistering.

Mr. HOOVER. The single albumenized paper is more porous, and allows the gas to escape without blistering.

Mr. WARDLAW. I have experimented with citric acid, and have found that so much sulphur was liberated that the prints were badly discolored. Burnishing cannot be accomplished to good advantage after using alum.

Mr. HOOVER. When prints are taken from the soda bath and placed in a bath of pure water with the face up, and allowed to sink by themselves, I find no blisters.

Mr. INGLIS. I have tried that plan and succeeded in obtaining plenty of blisters.

Mr. LEE. Blisters will almost always be produced by using a fresh solution of hypo. I think the solution should always be prepared on the previous day.

Mr. WARDLAW. When a hypo. solution is used a second time you do not find blisters.

Bubbles in the Developer.

The next question was, what causes bubbles in the pyro. developer?

Mr. LEE. They are not caused by glycerine, or they would show on the first plate.

Mr. INGLIS. I attribute bubbles to the manipulation, and not to the developer itself. If the developer is used frequently you will have bubbles. I have noticed after developing a plate, placing it in the fixing bath and then bringing it to the light, that parts were not fixed; I have returned it to the fixing bath and found that the spots were at once fixed. I think, in such cases, it is something on the plate and not bubbles which causes the trouble.

Mr. WARDLAW. Some manipulators call markings bubbles, when really they are small places where the developer fails to act.

Mr. EASTMAN. If a plate is held up the moisture will recede in spots; then if the plate is replaced in the solution it will not act on those spots. The spots are caused by the action of the air on the surface, which prevents the action of the solution. When a developer contains ammonia, a solvent of gelatine, after the developer has been used it will contain portions of gelatine and cause air-bubbles. All alkalies are solvents of gelatine.

Under the order of presenting questions for future discussion the following were handed in :

What causes blue marks and white spots on gelatino-bromide paper?

With a group of three to make, a lady dressed in black, a man the same and a child in white, the lady of light complexion and

child the same, and the man dark; how shall I develope?

The meeting adjourned after appointing a committee to consult with Dr. Forbes in regard to a lecture before the Association.

The Photographers' Association of America.

At a meeting of the Executive Committee of the Photographers' Association of America, there were present:

J. H. KENT, *President*.
 LEO. WEINGARTNER, *Secretary*.
 W. A. ARMSTRONG, *Treasurer*.
 E. KLAUBER, } *Ex. Com.*
 J. F. RYDER, }

Mr. Kent called the gentlemen to order, and on motion of Mr. Ryder, Mr. Klauber was invited to take the chair, and Mr. Armstrong to act as Secretary.

The Secretary was empowered to employ a stenographer to report the Proceedings of the Convention and furnish copies to the journals who apply for them.

On motion of Mr. Ryder, in view of the increased expense attending the coming Convention, the Treasurer was instructed to urge on all dealers, manufacturers and importers the necessity of notifying the Secretary without delay the amount they are willing to subscribe.

After considerable effort the Convention prevailed upon Mr. Kent to give practical demonstrations in the posing of a sitter; and as Mr. Kent stands at the very pinnacle of his profession these experiments will attract widespread attention. Several other prominent members will demonstrate under the light, but at present the Committee can not give their names.

The platform upon which these demonstrations will be made will be 30 by 50 feet, and the Committee will have everything in shape so that those desiring to make sittings can do so. Please notify the Secretary of P. A. of A. (Leo Weingartner, Cincinnati, Ohio) at once.

As it is a matter of the greatest importance at the present time, the Executive

Committee prevailed on Mr. Ryder to address the Convention upon the business management of photography.

Yours fraternally,

LEO WEINGARTNER,
Sec'y P. A. of A.

Chicago Photographic Association.

THE regular monthly meeting was held on Wednesday evening, May 7th, at the offices of the Van Depoele Electric Light Co., 203 and 205 Van Buren street; Dr. H. D. Garrison, president, in the chair. About sixty members and others were present.

On motion the reading of minutes of last meeting was dispensed with.

The Secretary read a letter from Mr. Charles Ehrmann, of New York, asking the Association to contribute toward the relief of Herr Huenerjaeger, and enclosing an extract from the *Deutsche Photographen Zeitung* (Weimar), of February 29, in relation to the matter. (This extract was published in the last number of *Photography*.)

On motion, Mr. Douglass was appointed to pass the hat, and \$8 00 was subscribed.

(It should be mentioned here that quite a number of those present had already contributed to the same object at the last meeting of the State of Illinois Association.) Mr. Douglass moved that \$5 00 be added from the treasury of the Association, and that the Secretary be instructed to forward the amount to Mr. W. Irving Adams, New York, who has kindly consented to receive subscriptions to this charitable object.

Carried.

Mr. G. H. Sherman, of Elgin, now read his paper on "Electric Light Portraiture," as follows:

Electric Light Portraiture.

MR. PRESIDENT AND GENTLEMEN:

The subject before us to-night might well have been assigned to better hands; but I will do as well as I can to entertain you, and give you my method of using the electric light in photographic portraiture. I have had electric light on the brain, as it were, for a year or more, and having seen

it established as a general illuminator in our little city of Elgin I thought I would try it on negative making. I had talked with several who had used the light to some extent, and all thought it would do; but it was quite expensive, some parties having expended several thousand dollars in the experiment.

After witnessing the demonstration at Milwaukee last August, and having seen some of the work from other sources, I felt a little discouraged, but still I was bound to see what I could do with one light. I got no expensive plant—merely one light from a circuit of thirty lamps used in our stores. The lamp is of 2,000 candle power, of the Van Depoele system, for which I pay \$12 50 per month. So you see that I hazarded very little in the trial. I have as yet attempted nothing but bust and half-form, as my arrangement of the light is more adapted to these styles.

I will now give you a description of my mode of operating. We will begin with the light, which, as I said before, is one of the Van Depoele lamps, suspended near the center of my reception room. It is arranged with cord and pulley, so as to be raised and lowered to any elevation. I use a large, ground-glass globe. I wish to say in this connection that, as far as my experience and observation goes, I think the Van Depoele light is the best for photographic uses. We next have a circular concave reflecting screen of fine white muslin. This is also fixed to a standard, and made adjustable to any height and angle. This I place within a foot of my lamp. I also have a mirror about 16 x 24 made adjustable. Next are my screens, etc. On the side next my lamp I have a screen of white muslin, 7 x 8 feet. In the center and near the top is an open space, 2 x 3 feet, which I fill with one or two thicknesses of blue gauze. This softens and diffuses the light. In the center of this gauze I place an oval piece of white tissue paper, sometimes two thicknesses, which I arrange so as to come directly between the sitter and the bright spark of the lamp. This also has a tendency to soften and dif-

fuse the light. From the top of this side screen I have a projecting screen of the same material coming out over the sitter, adjustable to any angle. This, when used properly, serves to give the combined top and side light effect. Next I have a large screen, or reflector, which I place on the opposite side of the sitter. This is also adjustable. I also have a hand screen or white muslin reflector which I use to throw the light in any direction and soften shadows. I use the ordinary background, or sometimes unbleached muslin. I light the whole or any part of the sitter or background with my mirror reflector.

This is my simple *modus operandi*, and if it will do anybody good he is welcome. I make no issue with Van der Weyde, Kurtz, or any of the "high lights" in photography. I do not say that my way is best, or that it cannot be improved upon; but I do say that it is simple, cheap and, with me, successful. I have received numerous letters from parties asking information, etc., all of which I have answered as best I could. I will say to any and all, get a lamp and try for yourselves.

I have used the light for printing with good results; also in copying.

HINTS.

If you use the electric light, *don't take tintypes.*

Give full exposure, time about the same as with wet plate.

Use the most rapid dry plates.

On the conclusion of this paper, Mr. Sherman proceeded to practically illustrate his method of working. He commenced by explaining that, owing to a misunderstanding, he had to work with an extemporized reflector made in a few minutes after 6 P. M. that evening, and consequently he would have to work under a slight disadvantage, and the exposures might be some seconds longer than if he had been provided with a proper reflector, such as he had used at home.

The first "victim" was Mr. A. K. Stiles, vice-president of the Van Depoele Co., whose stately form and venerable appear-

ance render him a very good subject. He was followed by Prof. C. E. Haskins, city electrician; after whom came Mr. Albert Wahl, traveling agent; Theodore P. Bailey Secretary; C. J. Van Depoele, electrician, and Mr. Fox, all of the Van Depoele Company. Some other gentlemen were similarly immortalized. The exposures varied from fifteen to twenty seconds, and the time seemed to have been pretty correctly judged except in one case, which was a little under-timed. Some of the negatives exhibited a slight want of sharpness, due probably to the vibration of the floor which carries the line-shafting used for transmitting power to the dynamos. Mr. Sherman used only one arc light, although two others had been generously provided by the company, making the room as light as at noon. Besides these three lights another had been fitted in Mr. Gentile's enlarging apparatus, and was used by that gentleman in making enlargements on albumen paper, which were printed in from five to twenty minutes.

Contact prints were also made on albumen paper by the light of the two arc lamps in the back part of the room. These were entirely successful, the exposure required being only a little longer than would have been necessary with diffused daylight. The development was in charge of Mr. P. B. Greene, who worked under serious disadvantages, the dark room being two floors above the "operating room," and the water supply sixty feet distant from the dark room. Under these circumstances Mr. G. is entitled to great credit for the satisfactory manner in which his part of the work was performed. The plates used were supplied by Mr. McDonald, Beebe & Payne, and the Hudson Dry Plate Company.

After the demonstrations were at an end, the Chair stated that Mr. Geo. E. Bowan, Mayor of Elgin, had tendered the hospitalities of that city to this Society, if they would come there to hold a meeting, and that this offer included free transportation. While he felt sure the Association must feel greatly indebted for this very kind offer, still he (the Chair) had doubts whether they ought to meet anywhere but in Chi-

cago. Mr. Gentile stated that a similar offer had been made to the State of Illinois Association, and would undoubtedly be accepted, as it was in order for that organization to meet anywhere in the State. Should the C. P. A. feel that it would be inappropriate to hold a regular meeting there, he would invite them to go as guests of the State Association.

Mr. DOUGLASS moved that this arrangement be adopted, and the invitation conceded to the State Association. Carried.

The CHAIR called the attention of those present to the fact that the next meeting of the Amateur Club, on the 19th inst., will be devoted to amateur exhibition of dry plate slides, and hoped as many as possible would attend. Place of meeting will be announced hereafter.

A vote of thanks having been passed to Mr. Sherman for his paper and demonstration, to the Van Depoele Electric Light Co., and Mr. Van Depoele in particular, for the handsome manner in which the Association had been entertained, and for courtesies extended to the committee of arrangements, also to the Mayor of Elgin for his very kind invitation, the Association adjourned.

The German Photographic Society of New York.

THE regular meeting of the German Photographic Society of New York was held on May 9th, vice-president Kutscher occupying the chair.

The thanks of the society were voted to the Messrs. Anthony for the BULLETIN and the loan of one of the new Photographic Enlarging Apparatus.

The subject for the evening was: Enlargements by means of the solar camera upon bromo-gelatine paper.

Mr. JAHR. Through the courtesy of Messrs. E. & H. T. Anthony & Co. we are supplied with one of their new enlarging cameras, and I should like to briefly explain it to you before we proceed to make a few specimens. As you see, this apparatus is very simple in construction, and is chiefly intended to make enlargements on

bromo-gelatine paper by artificial light; but it is also very useful in making lantern transparencies, and on account of the non-actinic glass panel on one side will serve well also as a dark room lantern, so that we could develope right here by this same light without needing another lamp. The relative position of the negative and condensing lens can be easily changed.

The paper we are going to use is made by coating the ordinary photographic paper with argento-bromide gelatine emulsion. A substratum of sulphate of barium and gelatine is introduced to overcome the dull surface common to gelatine prints. This paper is the same as we used at our last meeting for making contact prints. For the sake of several members who have not seen these highly interesting experiments, I may give a brief repetition. We exposed small pieces of this paper under negatives in ordinary printing-frames to the gaslight from 10 to 60 seconds, also to the flash of light of a match. Then we developed with—

Neutral oxalate of potash,* } 3 ounces.
Protosulphate of iron, } $\frac{1}{2}$ ounce.
Bromide of potassium, . . . $\frac{1}{4}$ dram.
(12 grains to the ounce.)

The developing has to be carried only so far as to bring out all the details; then wash and fix as usual. All our prints proved to be good and showed the big margin we have in fixing, if developed properly.

The use of this paper is almost unlimited for scientific purposes, as well as gallery use. For example, you can by means of this camera almost instantly make a proof from a *wet* dry plate, and can show it to your customers before they leave the place.

The committee appointed now made two pictures nearly life-size by an exposure of one minute on the extra rapid, and of fifteen minutes on the ordinary sensitive paper. The development was similar to that of the smaller pictures, and had the same good result.

A member put the question, if the price would allow of its being used instead of al-

bumen paper, and was answered by Mr. Jahr that the gelatine paper is not likely to interfere greatly with our present printing system, but would have its own particular advantages and uses.

Adjourned. LUDWIG SCHILL, *Sec'y.*

Photographic Pencillings.

BY G. H. LOOMIS.

I CAN give you but little of interest relating to the progress of photography in this section, as there has been no unusual activity among the craft. The return of more favorable weather, however, has inspired the brethren with new zeal and courage, and we may reasonably look for better times.

The stock dealers report the commencement of a good trade, especially in the line of amateur supplies, and we shall be surprised if there is not a regular stampede in this direction. The new, compact, convenient and serviceable outfits which recent invention has brought within limited financial range, has set the young people crazy with anticipation of vacation rambles among picturesque scenes in the country, at the seashore and on mountain heights.

In our enthusiasm and admiration of this new field of pastime and profit for the many, we have not paused to measure its effect upon the *regulars*, not anticipating at present that it can to any serious extent work injury to them, though upon further reflection we may see wherein it would dwindle dividends. At all events there is a growing demand for the portable photographic paraphernalia, and we are disposed to favor its introduction and use among that class of amateur associations for first lessons in this department of art. No doubt many picturesque points in landscape scenery and numerous novelties in groupings will enrich the portfolios of the summer tourist, and perhaps find places in more pretentious art collections.

In response to the Secretary's call we attended the May meeting of the Photographic Association, held at the rooms of Ritz & Hastings, 145 Tremont Street. A

* Both saturated solutions.

very fair representation of the craft from the city and vicinity were present. The discussion being upon the growing annoyance of *resittings*, while there was a universal recognition of the evil and a general enquiry for the way out of it, no one was able to suggest a plan that all could adopt, because of the circumstances which alter cases. An additional charge for every resitting had been tried and found wanting, because the mistakes or faults in the first sittings were not exclusively those of the subject or artist, for if there was unsatisfactory dressing, there was also objectionable posing.

It was conceded that every artist must make his own rules and regulations, as in the great variety of customers there were those who would exact the fulfillment of their wishes, and mutual concession and courtesy were necessary to maintain a pleasant and profitable relationship between artist and patron.

At the close of the session, the company present were invited to an inspection of the several apartments of Messrs. Ritz & Hastings, which were very much admired for their order of arrangement and for the ready-at-hand requisites and conveniences so desirable in establishments of this kind.

As noted in our last epistle Messrs. R. & H. are producing some excellent work, using both the collodion and emulsion methods, economy being a chief consideration where results are equally good.

Your space at this late hour will not permit me to mention some specimens registered in my note book, and I will allow them to lie over.

We learn that Marshall & Chute have become associated with the Blair Tourograph Company, but in what special line of business we are not at present informed.

Weldon & Metcalf have dissolved partnership, the latter retaining the business.

Photography and Still Life.

BY ARTHUR R. HUNT.

I HAVE been assured, by a gentleman to whose opinion all dabblers in science photography must bow, that the following meth-

od of photographing objects of still life was unknown to him, and that its publication might prove useful to others.

Having some years ago to photograph a series of implements to illustrate a paper on the Borlase Cave, I was met at the outset by the difficulty of avoiding cast shadows and such accessories as were needful for posing the objects to be copied. It occurred to me that a pane of glass, a white cloth, and some bees-wax would meet the difficulty—as objects fixed to the glass by bees-wax with a white cloth behind them would “come out” on a white ground free from the shadows and accessories I wished to avoid.

Having been recently asked to photograph some important bones, teeth, and flint implements, “necessity, the mother of invention,” has much improved on the original rough process, and I can confidently recommend the following cheap apparatus as extremely efficient, namely, a square pane of plate glass with a hole drilled in the centre (for fastening such objects as may be too heavy for the bees-wax), the pane to slide between two grooves into any convenient movable stand. The advantage of this form and arrangement is obvious, as, after the object or objects are fixed to the glass, they can be inverted or placed sideways, as may best suit the light, without moving the camera. Moreover, the stand can be tilted or set obliquely at the operator's pleasure, the object being thus adjusted to the camera instead of the camera to the object. The backgrounds can, of course, be changed at will to any shade between black and white—a most important power, as a background that will set off one object will often be unsuitable to another.—*Nature*.

ACCORDING to the Santa Cruz (Col.) *Surf* the funeral *cortège* of a child of Mexican parentage, on its way to the cemetery in that city, stopped in front of a photography gallery, and the father with the coffin under his arm took the remains up stairs to have a photograph taken of them, after which the funeral proceeded on its way.—*Exchange*.



The Coming Convention in Cincinnati.

By referring to the Report of the Secretary of the P. A. of A., it will be observed that the Executive Committee and officers of the Association have effected arrangements whereby the coming Convention in Cincinnati will probably be rendered unusually successful and of great ultimate benefit to the craft. The inducements offered are—

First. There is an abundance of space for the exhibits of the photographers as well as for the photographic requisites supplied by the trade.

Second. Large sums of money are offered as prizes for distribution by the dry plate manufacturers.

Third. The President of the Association, it is understood, will give practical demonstrations in the posing and lighting of a sitter. Judging from the high estimation in which Mr. Kent's abilities in this respect are held, these illustrations will undoubtedly prove exceedingly instructive and advantageous to all who may have the pleasure to be in attendance.

Mr. Weingartner, the efficient Secretary, has made great personal effort to render the occasion a profitable one, and Mr. Cady, the popular local Secretary, from our knowledge of him in the past, will leave no stone

unturned to render the Convention of 1884 one without parallel.

READ the following ringing sentences from one who knows:

ONLY TWO MONTHS.

It is full time that it be settled in the mind of every photographer whether he attends the Cincinnati Convention.

To those who argue with themselves that they cannot afford it, let me suggest that they consider also whether they can afford to miss it.

The progressive man will be there.

The enthusiast will be there.

The veteran will be there.

The student and amateur will be there.

The best quality of sociability will mark the gathering. Old friends will meet and new ones be made. A glorious time will be had.

Probably the finest exhibition of photography ever shown in this country will be found there, competing for the dry plate manufacturers' prizes.

Everything is in fine promise for the most successful Convention yet held.

Don't let it stand as a regret in your mind that you didn't go.

J. F. RYDER.

Onward to Cincinnati

THE Fifth Annual Convention of the Photographers' Association of America commences July 29th, 1884. Nothing so much entitles Cincinnati to be called a picturesque city as the striking beauty of her suburbs. Clifton and Burnet Woods are attractions the fraternity should see, visitors to Clifton being permitted to drive through the various private grounds. The great summer attraction of Burnet Woods is the music, given every Thursday afternoon, and there will be ample time to go there after the afternoon session. No one should fail to visit Spring Grove Cemetery, which is unexcelled for extent, beauty and improvement by any in the United States. In summer a more handsome and delightful spot cannot well be conceived of.

The Zoological Garden is also one of the places no comer to Cincinnati should fail to see; no city in the United States has so large and beautiful a garden, or so extensive and valuable a collection of animals. Do not forget to make a series of negatives of these beautiful places, and keep them as pleasant reminiscences of your trip.

The fraternity has also a special invitation from the Superintendent of the Young Men's Gymnasium, No. 102 Fourth St., to visit this famous institution during their stay in the city.

The following railroad companies have generously reduced the rates to those members of the Association who shall attend the Convention, namely:

Chesapeake and Ohio.
Cincinnati, Hamilton and Dayton.
Cincinnati, Indianapolis, St. Louis and Chicago.
Cincinnati, New Orleans and Texas Pacific.
Cincinnati, Washington and Baltimore.
Cleveland, Columbus, Cincinnati and Indianapolis.
Kentucky Central.
Louisville and Nashville.
New York, Pennsylvania and Ohio.
Ohio and Mississippi.
Pittsburgh, Cincinnati and St. Louis.

The rates are equivalent to two cents per mile each way. The companies will probably make one fare for the round trip. See June and July numbers of the journals and the *Eye* of Chicago for exact rates. All the stock dealers in the country will be notified of them also, and if half fare is adopted certificates will be sent to be distributed among the members.

Applications for space should be made at once to the Secretary, Leo Weingartner, cor. Sixth & Central Ave., Cincinnati, O. Make your applications early, stating the number of square feet required. There will be plenty of room for the display of photographs, backgrounds and accessories, and therefore stock dealers, manufacturers and importers will never have a better opportunity for the display of their goods.

In all cases freight must be prepaid; no attention will be paid to goods shipped otherwise. Every member is requested to send samples of his work, be they ever so few. The prizes offered by the dry plate manufacturers should induce every member to do his best. I have so much to say to the fraternity that I hardly know when to stop; but no one will ever regret that the Convention was held in Cincinnati, and all those who do not have a good time, it will be their own fault. I have done my best to show them how and where to enjoy themselves. With best wishes for your success, I am, your humble servant,

LEO WEINGARTNER,
Sec. P. A. of A.

Photographs Without Silver, or Gold, or Paper

WOULD certainly be a novelty that most people would consider very wonderful, if not impossible.

Yet pictures could be made quite as easily without these materials as the Photographers' Association of America can be successfully run with the same essential elements lacking.

The Executive Committee and other officers are not the Association, and the members would be unwilling to allow them

the privilege of supplying the necessary funds. These officers would feel too puffed up with their importance if allowed to do all the work and furnish all the means for conducting the affairs of the society.

In this view of the case I would suggest that those photographers who have so far deferred the pleasure of paying their dues, and the manufacturers and dealers who have not yet subscribed, should embrace the earliest opportunity of getting their names recorded on the books of Treasurer Armstrong, and then nothing can be lacking to make Cincinnati a grand success.

J. H. KENT, *Pres. P. A. of A.*

A Very Sensitive Silver Bath.

MANY years ago, while our store was at 308 Broadway, upon using a silver solution that had stood for some time somewhat exposed in my dark room I found it exceedingly sensitive. As this solution had been made in the ordinary way, except that glacial acetic acid was used, I could not account for its great sensitiveness except by the supposition that some of the pyrogalllic acid I was using in developing dry plate negatives had accidentally dropped into it. As the ability to make so sensitive a bath was desirable I at once set to work about the task of ascertaining whether my supposition was correct. I accordingly made a new solution, and having upon trial found it to work clear and clean, I took it into the dark room, dropped into it a little pyrogalllic acid (a quarter of a grain of pyrogalllic acid to one quart of the silver solution), stirred thoroughly and left it to stand in perfect darkness. After a few days I tried it, and could not with the iron developer get any image.

Upon a second trial some days later, after having allowed the developer to remain upon the surface some time, I opened a door to see whether I had any trace of an image, when the action of the light caused a positive to flash out upon the plate.

This was extremely thin, and upon being put in the fixing bath dissolved completely away. I now felt somewhat encouraged, and

allowed the bath to stand somewhat longer. Upon again trying it in a light that was perfectly safe for plates sensitized in the ordinary bath I got nothing but an apparently hopeless fog. Noting, however, that an image appeared which was immediately covered by this fog, it occurred to me that the fog was owing to the light in the dark room. Having then shut out all the light, and using merely the little light of a low alcohol flame, I obtained with instantaneous exposure outdoors a perfect negative without redevelopment or intensifying.

As the action of the bath appeared to be too delicate for everyday work at that time, and as I had in the meantime discovered another combination by which I obtained instantaneous collodion pictures without the drawback of the sensitiveness of the pyro. bath, I did not use it.

Having from time to time suggested the use of this bath to photographers for gallery work, and not having received favorable reports, I have recently repeated the experiment above related with perfect success, and as the use of non-actinic illumination in the dark room now makes the manipulation of the bath practical, I have concluded to give the benefit of this mode of working to those who use collodion, trusting that they may not find the preparation of the bath too troublesome, and that they will take proper care of the illumination of the dark room while using it.

As the pyro. throws down a certain amount of deposit it will be necessary to filter the bath before using it. This, of course, should be done in non-actinic light, and the bath while in use should not be exposed to a ray of actinic light.

H. T. ANTHONY.

Another Royal Catalogue

HAS come to hand (a royal octavo of over 200 pages) from Mr. Robert Dempster, who has recently succeeded Mr. Jas. H. Smith, the former dealer in photo. stock at Quincy. The indications are that Mr. Dempster has hit the nail in the right spot, and driven it home. Everybody praises it.

FOREIGN NOTES.

The Photographing of Colored Objects.

—It is when the photographer attempts to make a picture from some highly colored object, as for example a group of flowers or a painting, that he finds himself at a disadvantage. It is indeed a well recognized fact that those few houses who photograph paintings with success, either work from monochrome *replicas* of their subjects or they expend large sums in the working up of the negatives. I have myself known an instance where a large firm having to reproduce a picture (the bare line of the photograph being over 40 inches), first made an ordinary camera negative and after having spent a considerable sum in working upon this, took a print from it, and it was found necessary to again work upon this. A negative was now taken from the print and after a little more work had been done upon the plate another print was made, this second print being then sent to the artist who had painted the original picture; and after the artist had worked it up to his satisfaction, a third negative was made. This method of working, although expensive, has the merit of leading to the production of first-class results.

Your readers will remember that long ago Dr. H. W. Vogel proposed to stain collodion films with eosine, in order to make them more sensitive to the red and yellow rays; but, according to his original method of working, the results were not so good as to give the process much commercial value as a means of reproducing paintings. Quite recently, however, he has re-investigated the subject, and has perfected a method by which all the ordinary tints are represented according to the true proportion of their intensity, and full details are to be found in a paper by Vogel in the last number of the *Photographic News*.

The essential features of the improvement consist in the use of a specially purified eosine, which was prepared for Dr. Vogel by the Aniline Color Company, Schlesien Thor, Berlin, the use of bromide with a minimum of iodide (it being suffi-

cient to iodize the silver bath) and the superposition of a sheet of glass tinted with yellow over the article to be photographed. The matter is one of sufficient importance to justify the quotation of the working details. Dr. Vogel gives the following particulars:

No. 1, Color Solution.—At present only two coloring matters can be recommended as obtainable in commerce, the yellow shade of eosine, and the blue shade of eosine. Half a gram of the material is dissolved in 160 cubic centimeters of alcohol of 95°; and the clear solution must be decanted off.

No. 2, Collodion.—Two grams of bromide of cadmium are dissolved in 30 cubic centimeters of alcohol; this is filtered, and one volume of the filtrate is mixed with three volumes of neutral normal collodion made with 2 per cent. of pyroxyline. To 95 cubic centimeters of the above collodion are added 5 cubic centimeters of the eosine, or *color solution*. The collodion keeps best in yellow bottles, and should be brought into daylight as little as possible.

Silver Bath.—This is made up of crystallized nitrate of silver, 50 grams; water, 500 cubic centimeters; iodide of potassium solution (1:100), 13 cubic centimeters; and glacial acetic acid about 6 drops, or until there is an appreciable acid reaction. Nitric acid is not to be recommended for acidifying the bath, as it acts too strongly on the coloring matter.

Developing, Intensifying and Fixing.—The solutions in ordinary use for collodion will suffice here. The plates are treated like ordinary wet plates, and it is an advantage of the process that no strange operations are introduced. Those who can work the ordinary wet collodion process can work the color collodion process. Pyrogallic intensifiers, mercury intensifiers, uranium and lead intensifiers, may all be employed.

Preparation of the Plates.—It is best to gelatinize the glass plates first of all. One gram of gelatine is dissolved in 300 grams of warm water, filtered, and on cooling there is added 6 centimeters of a cold prepared chrome alum solution (1:50). The glass plates are first soaked in dilute acid,

washed, put in a dish of distilled water, and then twice coated in the gelatine solution.

The coating with collodion is done in the ordinary manner, but the plates must remain rather longer in the silver bath, as the formation of bromide of silver is very slow. At least five minutes' sojourn in the bath is necessary, although in a stronger solution the operation is quicker. Before work, the dipping bath should be tested with litmus paper, and acetic acid added, if necessary.

In respect to the illumination of the dark room, one need not be very anxious. I recommend an orange lamp-shade.

Exposure.—The sensitiveness of eosine bromide plates is about one-third that of ordinary iodized-collodion plates. This affords the operator sufficient data to go upon.

If it is desired to lessen the action for the blue still more, then you have to photograph through yellow glass; only in making the choice some care is necessary. Yellow window glass, by reason of its defective manufacture, gives rise to unsharpness, and therefore I recommend yellow patent plate; with this, pictures of faultless sharpness may be obtained. But to secure the right shade of yellow is also an important matter. If you use too dark a yellow, the exposure is very long, while too light a yellow does not act upon the blue sufficiently. My plan is to test the glass with the spectro-scope; but to those not accustomed to spectrum work I recommend the testing photographically.

I do not mean to say that every picture should be taken through yellow glass. After some experience the photographer soon learns which medium is the more suitable. At the worst, a few experiments will settle the matter. It must be mentioned, however, that the yellow patent plate prolongs the exposure (often three fold), as the best glass of this character absorbs not only blue, but also a portion of the yellow light.

The Second Silver Bath.—The plates, like those in the ordinary wet process, could be forthwith developed, if the bath was free from so-called organic defects; but, unfortunately, these are apt to arise by reason

of impurities in the coloring matter which have been introduced into the bath. Plates sometimes show fog, and sometimes show a cloudy unequal deposit, running in streaks from margin to centre. If the bath is very strongly afflicted with organic matter, the only means of avoiding the action of these impurities is to employ a second bath, which may be termed the developing bath. The plate is dipped into this bath after the exposure, but before development. It is made up of:

Nitrate of silver,	50 grams.
Water,	500 "
Nitric acid, sp g. 1.22	4 to 6 drops.

The plate is moved vigorously to and fro in this for two minutes, and thus the impure silver attached to it is washed off, and the eosine decomposed by the presence of the strong nitric acid. After a time the developing bath becomes impure, and then it may be used as a sensitizing bath, first being neutralized, and again acidified with acetic acid. Care must be taken to test this bath also with litmus paper before use.

The Development.—As a rule, the plates are developed with the ordinary iron developer used in the wet process. But the same success may be obtained with an alkaline developer, and the latter has, moreover, the advantage that the organic impurities are less liable to give stains. In the case of alkaline development, only one silver bath is used. The exposed plate is first washed with distilled water, then put under the tap for five minutes, and then once more in the distilled water. It is best developed in a dish with the following solution:

Carbonate of ammonia solution, (1:6),	2 c. c.
Bromide of potassium solution, (1:4),	$\frac{1}{2}$ c. c.
Alcoholic pyrogalllic solution, (1:10),	1 c. c.
Water,	30 c. c.

If the exposure has been too short, the amount of carbonate of ammonia, which must always be freshly prepared, may be augmented.

Distortion of Lenses by Pressure.—An interesting discussion on this subject took place at a secret meeting of the London and Provincial Photographic Association, it being pointed out that the working qualities of a lens are frequently injured by the distortion arising even from a gentle pressure of the metal mounts; and although the elasticity of the glass is ordinarily sufficient to cause the lens to gradually recover itself when the pressure is removed, a case was mentioned in which an objective had been permanently injured by pressure. Photographers can not be too careful to avoid putting pressure on the glasses when putting their tubes together; indeed, it is well to leave the glasses so free that they can be just turned in their cells. Of course, when the glasses are burnished into the brass rims, the photographer has generally to take them as he finds them. A curious instance of a permanent "set" or distortion being given to glass by pressure was mentioned. An old mirror to the central portion of which a candle bracket had been attached had become so strained by the weight of the bracket that objects reflected from the part surrounding the hole through which the stem of the bracket passed were shown as bent and distorted. About five years ago the bracket was removed; the plate glass immediately righted itself up to a certain point, but after the lapse of five years a certain amount of distortion was noticeable.

Mixing Emulsions. It has been suggested that practical advantages may be realized by mixing together various samples of emulsion; as, for example, one which is extremely sensitive but gives thin images with one which is less sensitive but better as regards density and other qualities. And according to Mr. W. K. Barton this method of proceeding is occasionally adopted in making emulsions for commercial purposes; an ammonia emulsion being mixed with a boiled sample, and it appears that the sensitiveness of the mixture is greater than the mean of that of the two constituents. The plate maker may by a judicious mixing of his emulsions, undoubtedly attain greater uniformity as regards the quality of his

plates, than would be possible if he were to work each batch separately.

Artist Photographers.—In a paper which Mr. Hume Nesbit recently read before the Edinburgh Society, there are some excellent remarks upon the spirit in which an artist should recognize the aid which photography can render him, and coming as these remarks do from a competent artist, they should be well considered by our brethren of the brush and palette. Mr. Nesbit says:

"The pride which keeps the artist silent, or makes him deny the charge of photographic borrowing is an utterly false pride, and the sooner it is knocked out of sight the better for all parties. Why should we not correct our sketches—done for the sake of the color and feeling and not for the form, from faithful photographs? It does not hinder us from being original in the after-treatment, although it may save us much time in the elaboration of sketch details. Why not save our time for something so much more worthy of it—the picture? Only not to the encouragement of lazy habits. . . . Hitherto I have wanted so much to be original that out of conscientious scruples I would not use the photographic studies which some of my friends have sent me. I looked upon them longingly and put them out of sight reluctantly, and so went down to sea-boards and meadows, catching rheumatics and toothache, and wasting hours upon hours, and many valuable sheets of Whatman's hand made paper trying to draw out all the rigging of ships, and the shapes of cows, losing the effect in my endeavors to get the manipulation, and in reality not getting a hundredth part of what I might have got with half an hour's rapid dashing in of color effects, and a moment's focussing. At present I know little or nothing about the art of photography; but I intend to make it my duty to learn a little more, enough to be able to sight a picture correctly, take and develop a dry plate and afterwards fix a print, for I can perceive plainly the time is coming on with rapid strides to the point when, along with his present utensils of color boxes and sketching block the painter will require to

carry his camera and stand and box of dry plates."

Prints on Matt Albumenized Paper.—Herr F. Wilde gives in the *Photographisches Wochenblatt* an account of a method which he has adopted with success for the production of a matt surface on ordinary albumen paper, without in any way interfering with the other good qualities of the prints or increasing the difficulty of working. The matt prints are much preferred in the case of large pictures. A solution of nitrate of silver containing one part of silver to eight or ten parts of water is treated with ammonia, this being added gradually with constant agitation until the precipitate first produced disappears and the liquid becomes clear. After this a ten per cent. solution of citric acid is gradually added to the ammoniacal nitrate of silver solution until a slight turbidity, which does not disappear on agitating the solution, is produced. To ten measures of the above solution one measure of ether is added. Ordinary albumenized paper is sensitized on the above solution, the subsequent operations being conducted in the usual manner.

The Number of Drops to a Gram.—A useful table has been published by Mr. Boymond, but it must be remembered that the exterior diameter of the tube from which the drops fall influences their size. When the tube has an outside diameter of three millimeters or one-eighth of an inch the weight of the drops is as follows:

<i>One gram of</i>	<i>drops.</i>
Distilled water, equal to	20
Alcohol of 90°, "	61
" 60°, "	52
Alcoholic tincture with alcohol of 60°, equal to	53
Alcoholic tincture with alcohol of 80°, equal to	57
Alcoholic tincture with alcohol of 90°, equal to	61
An ethereal tincture, equal to . .	82
A fatty oil (variable) about . .	48
A volatile oil (variable) about .	50
An aqueous solution, diluted or saturated,	20

<i>One gram of</i>	<i>drops.</i>
A wine (variable according to amount of alcohol), . .	33 to 35
Laudanum (variable) about	33 to 35

As far as measurement by drops is concerned a gram may be regarded as fifteen grains or one-fourth of a dram, although a gram is in reality nearly fifteen grains and a half.

Bromine as a Fog Eliminator.—Some leaders in the *Photographic News* point out the value of free bromine as a means of undoing the accidental action of light on emulsion or plates, and the especially valuable feature of the suggestion in the circumstance that a very minute trace of bromine will answer the purpose, and that the long and troublesome washing which must follow the use of such a fog eliminator as bichromate of potassium is altogether avoided.

A saturated aqueous solution of bromine or "bromine water" contains about one-thirtieth of its weight of bromine, and by adding one minim to an ounce of water a solution is obtained which is sufficiently strong to clear away fog if the plates are left in it for five minutes. No subsequent washing is required.

A very convenient way of using the bromine is to sprinkle the inside of the drying box with bromine water so that the plates shall dry in an atmosphere very slightly charged with the vapor. The Editor of the *News* says:

We think the use of free bromine as we have described it may be found useful in the hands of emulsion makers. It has had the practical result in our own case of enabling us to get more sensitive plates than we otherwise could. Up till the time we tried the use of free bromine the limit of sensitiveness was reached with us when we could no longer dry our plates without fog making its appearance during the process.

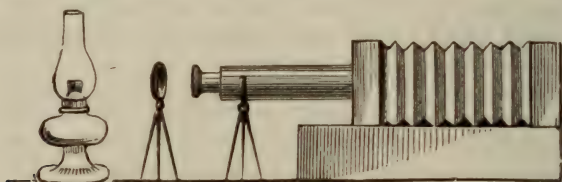
Simple Apparatus for Microscopic Photography. The April number of the BULLETIN, which has just arrived, contains the remarks of Prof. Dudley on the ease with which photographs of microscopic objects

may be secured upon gelatine plates and the simplicity of the apparatus required. It may interest your readers to see a sketch of the arrangement adopted by Mr. M. Allison, who has been extremely successful with difficult subjects. It consists merely of a microscope tube adapted to an ordinary camera. Mr. Allison says:

In the first place, all that is necessary for the production of photographs from microscopic slides is a good microscope, a camera of quarter or half-plate size, and a good lamp giving a steady flame. I have in my practice used a microscope of Matthews, an old-fashioned one with plenty of metal at its base, giving it a firm stand, and one which is capable of being placed in a horizontal position—the camera, an ordinary bellows-body one, being attached to the

microscope by removing the eye-piece of the latter and the lens of the former, and placing the camera with microscope attached thus in one plane, so that when the lamp is placed behind the condenser the rays of light will pass straight through the whole affair, and fall exactly in the middle of the ground glass. You can fill up the interstice between the microscope and camera-front with anything suitable, such as a silk handkerchief wrapped round the brass tube; or it would of course be a better plan to make a camera front specially fit the microscope tube.

Having seen that the lamplight, condenser, object glass, tube, and centre of ground glass are all in one plane, you may commence operations with any suitable slides. In first beginning, use a one-inch



or half-inch power, and practice with it until sufficient experience is obtained to warrant your proceeding to a higher power. When practicable, it is as well, or better, to use a low power, and get a sharp negative; this of course may be afterwards enlarged by the lantern to any reasonable size.

Blisters on Albumen Prints.—It is strange to notice that complaints as to the appearance of blisters seem to recur periodically, but little that is absolutely reliable can be gathered as to the true cause of this trouble. Just now one finds that many are complaining, and this may be partly due to the circumstance that very highly albumenized papers are generally preferred. Such a paper will often blister when it is sensitized on a strong silver solution, and will give no trouble if a weaker sensitizer is used. Although freshly prepared paper is much more likely to blister than that which has been kept in store for some time, several cases have occurred in which a slight decomposition of the albumen coating

from the action of damp has given rise to some of the worst cases of blistering. In connection with the subject the *Photographic News* says:

Among the numerous remedies suggested for this kind of blister, perhaps there is not one so efficient as the plan of equalizing the temperature of all the solutions made use of, increasing the density of the washing waters between toning and fixing, by the addition of a handful of common salt, and diluting the hyposulphite bath gradually, instead of transferring the prints directly into the washing trough; or, what amounts to the same thing, employing salt in the first and second waters after fixing. It is very seldom blisters make their appearance until the prints have left the fixing bath, and are in the act of washing. We may here mention that there is less liability to the defect when prints are face downwards during fixing and washing.

Woodburytype Printing with Gum.—Professor Leon Vidal, of Paris, in experi-

menting on the Pavlowski process has endeavored to use the mixture of gum and enamel pigment for Woodburytype printing. He writes: This (the Pavlowski method) led me to try a mechanical method of Woodburytype printing with ink made of gum arabic dissolved in water, added to vitrifiable coloring matter, made sufficiently thick. In my first experiment, I made a 25 per cent. solution of gum arabic, and let it evaporate in the water bath until it was of a semi-syrupy consistency. The coloring powder ground on a muller with gum water was next introduced in small quantities at a time, shaking it well to disperse the color throughout. The liquid, filtered through muslin, and left for a moment, was poured on a Woodburytype mould previously greased. A piece of smooth paper, having been pressed against the mould for a minute, was backed by unsized paper soaked in rectified alcohol, and pressure was again applied for five or ten minutes. The alcohol coagulating the gummy ink, allowed the image to detach itself from the mould just as if gelatinous ink had been employed. All vitrifiable powders, provided they are not too heavy to be held in suspension in the gum, may be used in this way. The surface of the paper ought to be well sized and glossy, at the same time permeable to the alcohol. The bare principle of my process is here indicated, but details will be given after making a sufficient number of experiments.

What Spoils Most Portraits.—Mr. Baden Prichard strikes the key-note when he attributes the principal mischief to an exaggerated feeling of self-consciousness on the part of the sitter, and he tells me that he intends to publish the subjoined highly pertinent remarks, which, however, he has kindly allowed me to forward to you in advance.

Self-consciousness mars nine portraits out of ten. That is to say, the fact of the model being conscious of the portrait being taken is observable in nearly every photograph, and as a result, the picture is more or less spoilt. Some people, of course, betray their consciousness more than others, and it is only the model himself who knows

the full extent to which the cloven foot peeps forth. This matter of self-consciousness in photographs has, time after time, been put forth as an argument against camera portraits; and on behalf of the painter, it is urged that he never falls into the error of reproducing it. He is supposed to sit opposite the model hour after hour, and reproduce the more winning characteristics of the face, while ignoring all such as are due to the unpleasant incidents of the sitting. Why he should not in these circumstances reflect a little boredom occasionally, as well as a bit of self-consciousness on the part of *his* model, we do not know; but we are told that his work is confined altogether to gathering all the beauty and *esprit* of his model and transferring it to canvas. No doubt this is his function; unfortunately there is a wide difference between trying and succeeding, and, to judge from the portraits seen year after year on the Academy walls, it would seem that in most cases you must take the will for the deed.

In fact, it is here precisely where the public show a predilection for photographic portraits. If pictures could be painted according to the charming theory we have just expounded, which is advanced again and again by artists to prove that the photographer can never compete with the painter in producing satisfactory portraits, there would not be another word to say on behalf of the camera. Who can gainsay the painter in his wonderful professions? He seizes the smile as it hovers about the lips, the deep thought that marks the brow, the soft pensive expression straying over the eyes. All that his keen watchfulness sees his subtle brush arrests, he would have you know; while on the other hand, the glassy eye of the camera, that stares on glowing warmth and icy coldness with equal indifference, simply reproduces the hard outlines before it.

What can be more convincing than this argument, with which painters are ever ready to pulverize and utterly annihilate the poor photographer!

But where are these wonderful portraits of our painters? Granted, if you please,

that there are six portrait painters at this moment in Great Britain who can do all this—though the Academy walls deny the fact year after year—what influence can these six men have? They require their hundreds, nay thousands of guineas for a portrait, and even if they only asked as many pence, the portraits they could paint would be but a very insignificant number. How are other people to fare who want their portraits? They must surely choose between the photographer and the second-class painter. So that with ninety-nine persons out of every hundred it is not a matter at all whether a fine painting is not better than a fine photograph; this is beside the question; it is whether an ordinary photographic portrait is not better than an ordinary painted portrait. Nay, if you like, whether a bad photograph is not better than a bad painting, in portraiture.

This is why people, despite the grand arguments of the painter, are content with a photograph. But then there is that grave fault—self-consciousness—to which we have alluded. No doubt; only if this is observable, as we say, in nine photographs out of ten, it is painfully apparent in every second class painting. The vacant look more or less rigid, and the pose at once stiff and unnatural, are to be seen in the great majority of portraits accepted by the Royal Academy.

In fact, if you took in your hand the same number of photographs issued by first-class studios as there are portraits in an Academy exhibition, and were to pass all of them in review, we make bold to say there would be twice as many instances of "having your portrait taken" among the paintings as among the photographs.

Self-consciousness in portraiture is therefore not confined to photography; it is a fault still more common in paintings, despite the grand theorizing of the painter. So that the public have come to make comparison not between the finest photograph and the finest painting, but rather between a defective photograph and a defective painting. We say defective, not in any inferior sense, but simply because both classes of portraits

lack perfection. Since it is absolutely impossible for most people to get this absolute perfection in their portraits, they wisely choose the lesser of two evils, and take photography. A second-class photographic portrait may show the model in a bad light, but at any rate it is the person himself with all his individuality and identity, while the second-class painting is considered sufficiently good if it contains a "something" recognizable in the original.

While pleading guilty to the presence of self-consciousness in most photographic portraits—a defect that painters, at any rate should be silent about, if we judge from their results rather than their professions—it must not be forgotten that the days of slow-action films have long since past, yet the old criticisms passed on Daguerreotypes still cling to photography, albeit no model is asked nowadays to remain quiet before the lens for two or three minutes. People still think—and some photographers among them, we are sorry to say—that it is absolutely necessary to adopt a fixed look during the pose, notwithstanding the circumstances that the duration of this is reduced to a very few seconds. Now there is just this difference between the photographer pure and simple, and the photographer who is an artist. Not content with occupying his mind with the pose, lighting, and drapery of his model, the latter takes endless pains to get a happy—not necessarily a smiling—phase of the model's face, while the former's chief concern is all confined to the steadiness and immobility of the sitter. If the model has not moved, if he kept his mouth steady and his eyes fixed, nothing can be more successful, thinks the matter-of-fact photographer, and hence came the old popular cry that all camera portraits were alike; they all possessed the same sort of expression. It could not well be otherwise in the days of Daguerreotypes, and even collodion in the hands of an artist failed very often to do what was wanted. But every day not only brings more artists into the ranks of photography, but increases the power in their hands; and we trust that the time is not far distant when the artistic picture

will be the rule, and the self-conscious portrait the exception.

Gelatine plates should do much to advance art-photography in portraiture. By their means the true artist has twice as many chances of success, for his tools are now so much sharper in their action. His efforts at successful lighting and posing will not be so frequently marred at the last moment by a defective expression; he is able to watch the features before him, and to choose the expression that pleases him most, whether this comes during a phase of animation, or during repose.

The main object, however, is, after all, to get rid of the look of self-consciousness. In presence of this, the most delicate and transient phases of expression—generally the most beautiful—are irretrievably lost. The photographer can do this properly in only one way, by not permitting the model to know the moment of exposure. But then the exposure must be of the briefest. With some nervous persons, even in these circumstances, it is necessary to pretend to expose once or twice before the flurry and excitement under which they labor is appeased; still, how he brings about the end is a matter that the photographer must settle for himself. We ourselves, a short time ago, sat for a portrait, without being aware of the moment when it was taken. The artist had finished lighting and posing us, and we were about to begin to feel nervous at the close proximity of the eventful moment, when we were told the expression would not do at all. And while we were in good faith trying to do something better, the artist looking on and criticising the while, we were quietly told it was all over, and that there was no necessity for nerving ourselves for the ordeal. The top of the spine had omitted its function of Rhumkorff coil in shaking the head-rest, and our expression had been seized before there was time to utter that phrase of "papa, potato, poultry, prunes, and prisms," which we have the authority of Charles Dickens for saying affords a proper setting for the mouth.

The photographic picture, if not yet perfect, is nevertheless a portrait, the value of

which is so intrinsic that it will always be set before any other portrait, except, perhaps, a painting of the very first order. But it behooves photographers to strive to their utmost to improve it, and this can only be done by first acknowledging its shortcomings. A rapid exposure is certainly one of the best means of encompassing the worst of these, self-consciousness, and our readers will do well in striving to minimize this defect to the utmost of their power.

The Death of Mr. Baden Pritchard.

ON Sunday, the 11th of May, Mr Henry Baden Pritchard breathed his last. He was just recovering from an attack of pneumonia, which had commenced about eight days previously, and on the morning of Sunday he was so much better that his friends had altogether ceased to be anxious about him; but towards 7 o'clock in the evening the action of the heart suddenly became sluggish, and in ten minutes he was dead. It is supposed that a clot had formed, and that this blocked the action of some vital part. Mr. Baden Pritchard was the third son of the late Andrew Pritchard, one who was well-known in his time as a laborious microscopist, and whose reputation mainly rested upon his well known *History of Infusoria*, and the construction of microscopic objectives of diamond. Although Mr. Baden Pritchard inherited the scientific tastes of his father, he also excelled in purely literary work, and earned considerable reputation as a novelist. His first essay in literature was a short sketch of a walking trip called *Peeps in the Pyrenees*, this being followed by *Beauty Spots on the Continent* and *Tramps in the Tyrol*. Among his novels may be mentioned *Dangerfield*, *Old Charlton*, *George Vanbrugh's Mistake* and *The Doctor's Daughter*.

As regards Mr. Pritchard's photographic work it is not necessary to say much, his writings being so well known by our readers. The clear and pleasant way in which he conveys valuable information is well illustrated by the *Studios of Europe* and

Photography and Photographers. For many years he was on the council of the Photographic Society of Great Britain, and for some four or five years he acted as honorary Secretary to this body. At the time of his death he was one of the Vice-presidents.

The personal qualities of the deceased were such as to endear him to not only those who had business transactions with him, but also to a numerous circle of friends. He was always ready to help the weak in a contest against the strong, and to give help to those requiring it, and the absence of his genial face and cheerful conversation will be acutely felt in the photographic circles of London. He was married in 1873, and leaves four children. The interment took place at Abney Park Cemetery, on Thursday the 15th of May.

Photographic Retouchers and Albumen Whites.

GUNTHER WAGNER'S photographic retouchers and albumen whites for spotting and retouching photographs are highly recommended by all the leading photographers. They are put up in cylinders at fifty cents each as follows:

Blacks.



No. 1, brownish tint; No. 2, reddish tint;
No. 3 bluish tint.

Albumen Whites.



No. 1, pure white; No. 2, light yellowish white; No. 3, deep yellowish white.

Photo. Artists' Boxes.

Empty fine polished wooden boxes, to

hold 3 blacks, 4 whites, and with division for metallic leads, pencils, etc., per piece, \$0 75.

Our Illustration.

THE illustrations for May were made by Mr. S. D. Wardlaw, the well-known practical photographer employed by the Eastman Dry Plate Co., in their photographic gallery at the dry plate factory in Rochester, which is elaborately furnished with everything necessary for making photographs and for testing their emulsion previous to its being used in coating plates. The negatives are on the Eastman Special, and the prints on paper manufactured by the Amer. Albumen Paper Co., known as the Hovey. The printing was also done at the establishment of the Eastman Dry Plate Co. The pictures will no doubt be much admired.

How to Use our Albumen Paper.

FLOAT a minute (more or less) on a sixty grain solution of silver made slightly alkaline by ammonia.

Fume long enough to slightly bronze the shadows.

Wash well and tone in a good toning bath.

As the paper does not blister, the salt bath, after fixing in the hyposulphite, is unnecessary.

The above will give good results, where an acid or weaker bath would not be satisfactory.

AMERICAN ALBUMEN PAPER CO.

Who Use the Eastman Plates.

IT gives us great pleasure to say that Mr. B. W. Kilburn, who recently left our shores for an extended tour abroad, took with him a large quantity of the Eastman dry plates.

Mr. Kilburn will undoubtedly bring home with him a rich collection of negatives to enhance the good name of American photography, and of the American (Eastman) dry plates *especially*.

Report of the Photographic Section of the Amer. Institute.

NEW YORK, May 6, 1884.

PRESIDENT NEWTON in the chair.

Mr. MASON. I have received the *General Transactions of the Photographic Society of Great Britain of March 28, 1884*; the first number of a photographic journal published in Chicago, which is to be issued semi-monthly, and a letter from the editor saying he will be glad to furnish the Section with a copy of the paper. Also ANTHONY'S PHOTOGRAPHIC BULLETIN for March and April, and a letter from Mr. G. G. Rockwood, in which he says that owing to illness he will be unable to attend this meeting.

Mr. GARDNER then read the following :

MR. CHAIRMAN AND GENTLEMEN: Before introducing the subject of the evening, the Executive Committee desires to correct an impression that has been more or less prevalent among professional photographers in regard to disclosing trade secrets. It has been thought by many who were practicing secret processes, that they had no right to speak of these in this Section without they gave their methods of working entire; and for fear they might be censured for their reticence, they have often declined attending the meetings, thus depriving themselves and the Section of hints and suggestions that could not fail to be, either directly or indirectly, of practical use to all. The Executive Committee in their efforts to make this Section equally useful and attractive to all, wish it to be distinctly understood that it is not their purpose or desire that any one who may take part in these meetings should disclose anything that might rob him of the just rewards of his labor. But while he is thus justified in guarding his own personal interests, it is hoped he will not withhold his experience in matters of a more general character. As he freely receives, so let him freely give. It is not expected that the manufacturer of emulsion plates will come here and tell us precisely how he makes them; but, not-

withstanding, he may tell us much that may tend to our better success.

This applies equally to the trade secrets of the merchant, and to the secret processes that cannot be protected by patent. Yet the workers in these are often in the possession of information, and can impart it without detriment to themselves, of the greatest practical value to such as make a specialty of some other branch of photography. Thus each may help the other, and thus together raise the standard of the profession to the position it should justly occupy. Some of our photographic friends excuse themselves from attending the meetings of the Section by saying they read the reports of them in the BULLETIN, but this is scarcely a valid excuse, for they thus show the disposition to profit by the experience of others without contributing their own. Again, their excuse is scarcely valid from the fact that they can only thus get a brief summary of what is really said and done, or exhibited in way of negatives, pictures and apparatus. The reports may be good so far as they go, but it is only to those who actually attend the meetings that they are the most suggestive, useful and attractive. It is to be observed, also, that some who are in the habit of attending the meetings are very much disposed to regard all exhibits and everything that is said and done as an advertisement of some particular person, company or thing. Even if this were true, there could be no valid objection to it so long as what is said or exhibited is of general interest to the audience, and tends to the advancement of the art; for whatever is useful or beautiful in art is not to be rejected even when produced by selfish minds for selfish ends.

And now, Mr. Chairman, in introducing the subject of the evening, allow me to preface it by saying that during the first years of the collodion process I was persuaded by a Dr. Rosenmiller, who then kept a drug store near my place of business, to make some experiments with bichromate of potash, united with organic matter of some kind, as a sensitizing agent. I had not proceeded far, however, in these experi-

ments before my attention was called to other work of a more imperative nature ; but I had gone far enough to confirm myself in the belief that bichromate would some day in the future be successfully employed in making sun pictures.

But in my most glowing imagination I never dreamed of what has been actually realized in its use in the Artotype by Bierstadt, the Phototype by Gutekunst, the Galvanotype by Sheffield, the Photo-electrotype by Rhodes, and last, though not least, the Horgan, the Shugg Bros., the Kurtz, the Morse, the Roche and the Moss processes. Besides these there are a host, which no man can number, who have made innumerable experiments, all based on the same general principles, and have worked out modes of photo-mechanical printing more or less useful in the world of art. Each of these have their secrets and "Bluebeard" chambers, and claim points of excellence that are not apparent in any other process. It is possible, however, that their chief secrets are to be found in the expertness, untiring energy and ingenuity manifested in their work. Without these the best processes of photo-mechanical printing now known would be of little practical value or use. It is by photo-mechanical work that the negatives of to-day may be printed in colors that will not, like silver prints, soon fade away ; and thus shall be truly seen the advancement of the art in the years to come.

From 1813 to the present hour experiments have been continuously made to devise ways and means for the production of pictures by the combination of chemical and mechanical appliances ; but it is only within the last ten years that process printing has been really a commercial success, and for this we are indebted as much, perhaps, to John C. Moss, as to any other experimentalist in this special field of art-science. Any who are desirous of knowing what Mr. Moss has really done, are referred to the May number of ANTHONY'S BULLETIN, in which will be found a brief sketch of his struggles and final triumph in photo-mechanical printing. In 1839 Mun-

go Ponton first discovered the sensitiveness of bichromate of potash to light when combined with organic matter ; and the following year Becquerel found that paper sized with gelatine and treated with bichromate produced the most favorable results. Thus was introduced the use of gelatine in photography. This was followed by Fox Talbot's discovery of the insolubility of gelatine combined with bichromate when exposed to light, and this led to the discovery that gelatine when thus treated did not swell when immersed in water. On these few simple facts are based all the gelatine processes that have come into public notice.

With this brief introduction to the subject of the evening, I will submit to your kindly criticism some samples of the Moss Photo-Engraving Company. As this is a secret process, I am not at liberty to tell you precisely how these pictures are made. I can only give an outline of such parts of the work as Mr. Moss does not attempt to conceal from his patrons or workmen. First, then, he makes a negative of the subject to be engraved, in the same manner that any photographer would proceed in copying a picture. This is printed on photo-drawing paper and fixed in hypo. without being toned. This proof then goes into the artist's hands and is sketched in ink. It is submerged in a solution of bichloride of mercury, which obliterates the photo. impression, and leaves only the ink marks of the artist. From this a line work negative is made which is printed on a plate prepared with gelatine and bichromate, which thence passes through the Bluebeard chambers, and is then seen in the hands of the metal engraver, who after sharpening and deepening the lines submits it to the proof-printer ; and if it passes his criticism, it goes to the steam press, and the copies are printed in precisely the same manner as ordinary book work. To meet the requirements of the establishment a hundred and twenty-five workmen are kept constantly busy, and with this force, I am told, Mr. Moss can do the work of 1500 wood engravers, and for a sum that would in no way pay them for their labor.

Mr. GARDNER. I will state that three of the gentlemen who expected to be here to-night will be unable to be present on account of illness or extra work. Mr. Du chochois will give the opening paper at the next meeting, and the subject will be, *The Action of Light on Silver Salts.*

The PRESIDENT. I will now introduce Dr. Ehrmann, who will read a paper on—

Technical Photography and Mechanical Printing.

Your committee has again honored me with the request to read a paper before you, and in this case I am desired to say something about technical photography and mechanical printing. I am not competent to give you detailed descriptions of the processes you want me to describe, but am fully aware of their great importance, and the great future they open to the practical photographer.

The desire to multiply photographic negatives rapidly, and to an unlimited extent, has given a stimulus to all the endeavors in that direction. At present, there are now in New York a number of establishments and individuals who are following these pursuits more or less extensively.

Lichtdruck printing, photo-engraving, photo-lithographing, the Woodburytype processes and heliogravure are all practiced successfully among us; while galvanoplastic, as an aid in multiplying photographic productions, is carried on to a degree of accuracy and perfection hardly dreamed of.

Printing on fabrics has come forward again; photo-ceramics never had firm footing; but photographing on wood, for the engravers' use, is carried on here in wonderful and amazing excellence.

In the earlier days of photography, the desire to multiply the negative obtained with the camera soon became manifest everywhere. The tedious process of printing silver proofs led to the desire for cheaper and easier methods of reproduction.

Nicephore Niépce employed asphaltum (*bitumen indaicum*) to coat a steel plate with. The bitumen being sensitive to light, received when exposed under a negative an

impression. The parts not acted upon were washed away by means of essential oils, of which Niépce has given us detailed descriptions. The parts of the steel plate laid bare by the action of the essential oils were then etched by acids, the plates retouched and made ready for printing. This was probably the earliest attempt of printing with the press from photographic *cliches*.

The sensitiveness to light of the bichromate of potassium and ammonia was later made the subject of diligent study by Talbot, Poitevin, Abbé L'Aborde, Brebisson, Becquerel, Mungo Ponton and many others; and it may be well said that Poitevin especially laid the foundation to all the mechanical photographic printing now so extensively used.

When a bichromate mixed with gelatine is exposed to the action of light, it becomes hard and insoluble in water. The entire compound assumes the form and properties of leather. When, therefore, a film of gelatine prepared with a bichromate is exposed partially to light it is evident that the exposed parts become solid and insoluble while the rest may be easily washed away with water. It can be seen that when such a bichromated gelatine film is exposed under a photographic negative to the action of light for a sufficient time, the most transparent parts, the shadows of the pictures, allow the gelatine film underneath to become solidified, while the white, opaque parts of the negative allow no rays of light to pass through. The half tones and gradations between the positive blacks and whites are, as a matter of course, acted upon according to the density of the negative plate.

After sufficiently exposing, the film is washed in water; the parts not exposed are dissolved, and those acted upon by light stand out in bold relief. Such a gelatine relief, when perfectly dried, can be printed from and is the foundation of nearly all the different methods of mechanical printing.

Before we review any of the chromo-gelatine printing processes, where mechanical presses are used, it is well to mention the so-called carbon printing, by which upon a chromatized gelatine film attached

to paper positive copies are made by subjecting each individual print to a chemical operation and manipulation. Beautiful results have been obtained with the process, Braun, of Dornach, probably standing pre-eminent.

Carbon prints have been made, and are still made in this country, but their advantages have never been generally recognized.

Lichtdruck.—Joseph Albert, of Munich, and probably before him Tessie du Motay astonished the world some twenty years ago with an organized method of employing the suggestions of Poitevin. The camera negative was copied upon the bichromated film in all its finer tones and modulations, and prints made from it to a limited extent only. These pictures were then known by the name of Albertype. The appellation *Lichtdruck* was afterwards accepted when others had made similarly successful attempts. The artotype and phototype are almost identically the same. Modifications also are the collotype, Woodburytype, stanotype and glyptotype.

Photo-gravure or helio-gravure, of which we daily see the most astonishing results, is carried on to perfection by an European firm, the Messrs. Goupil. Their process has not been made public, but rests especially upon etching of the plate. Herr Obernetter of Munich, as we are informed, has recently made successful efforts in a new heliographic method. He transfers a gelatine matrix upon a metal plate, grained, and etched with weaker and stronger mixtures of perchloride of iron and chromic acid.

The so-called photo-engraving so much practiced among us is purely mechanical, by which prints, engravings or drawings are copied photographically from very intense negatives, printed upon a bichromated gelatine film, upon which either by swelling or washing out the film, plaster casts, stereotypes or electrotypes are made ready for the printing press.

A method which promises to be of great bearing for illustrations of various kinds is the Autotype, Meisenbach's process, and many similar ones. The gradations of a

perfect camera negative are broken up by a fine stipple, line or lattice work, thus rendering it by different manipulations and by etching suitable for use in the ordinary printing press.

What is done in some of the directions indicated I will comprise in reading a report of Major O. Volkmar, of the photo-technical division of the Imperial Military Institute of Vienna.

The report gives first numerically the work done in photography and photo-chemistry, during 1883. There had been made—

258 reversed negatives for the heliogravure process, averaging in size 53 x 62 c. m.

451 glass negatives for photo-lithography of 65 x 88 c. m.

1101 glass negatives for silver and carbon printing.

18 glass positives for photo-chemistry.

The superintendent of a subdivision, Mr. Mariot, has of late made improvements regarding the rendering of the camera negative adaptable for printing with the press in lithography and copper-plate printing.

In *lichtdruck* and heliogravure, the gradations of tone are created by thinner or thicker color strata, while in typography and lithography the roller distributes the color equally, whereby not a continuous but an interrupted surface forms the pictures. Mariot's new process is very simple. The effect is caused by—

a. Interruption of the continuous tone by the superposition of a grain.

b. Sufficient over-exposure, till the grain is visible in the most developed parts.

c. Perfect intensification.

These characteristics of the process must be borne in mind. By long continued action of light, and subsequent intensification, lines or dots are brought nearer to each other. Success depends principally on the selection or density of this grain or *Korn*. The making of it is the most important and the most difficult part of the whole business. If too strong, it closes but little or not at all in the deeper shadows; if too fine, it acts too soon or too much, and is difficult to print from. Its quality must

correspond with the object before you. A cabinet plate will require a much finer *Korn* than a half life-size head.

To make a perfect grain in larger sizes, Mariot proposes to enlarge a small plate six or eight times, to transfer it upon stone, equalize it by graver and retouching, and compose from such small sections an uninterrupted plate, which may then serve for various purposes by enlarging or reducing.

Such a grain or *Korn* is applied by making a copy of it, and placing the stripped pellicle between the negative and sensitive film, or transferring the same at once upon the plate. Various and very ingenious methods have been followed, and have led to extraordinary success.

In carbon printing a new improvement is mentioned, by which the blackened film is not solidified from the surface downwards, but simultaneously all through the film.

1168 photo-lithographic stones were prepared and printed from, 190 heliogravure plates, of average size 48 x 56 c. m., and 3 kilos by weight of copper were used, while the galvanoplastic division of the Institute produced 273 plates of different sizes.

THE PRESIDENT. I now have the pleasure of introducing Mr. Horgan, who was formerly connected with the *Daily Graphic*, and who has had large experience in the line of newspaper photographic illustration. He will now tell us something of his experience.

Photography on the Newspapers.

Mr. President and Gentlemen of the Photo. Section of the American Institute:

To you I am under lasting obligations for information received in the perusal of your monthly proceedings, and wish that I could in some way reciprocate. So when your worthy Mr. Gardner asked me to tell you something of the application of photography to the newspapers, it was this sense of my indebtedness that prompted me to say that I would, and that the small mite of information which I would attempt to contribute, notwithstanding the crudeness in which the subject was treated, and the puerile man-

ner in which it is delivered would in consideration of the spirit in which it is given be at least patiently received by you. But when I attempted last evening to collect my thoughts and jot down some of the facts of my experience, I was surprised to find how vast the subject was, and how little after all I knew about it. Though the object to be attained is simply the presentation of pictures in a newspaper the methods used are so multiplex and the processes so variable, that to keep in the track and avoid being switched off by the various branches of detail I thought it better to consign my little story to paper and read it off, boy's composition style; beside this is my maiden attempt in this line and you can see it comes about as natural to me as flying would.

I think it was Charles Dickens who said of the newspaper man: "He photographed everything, epitomized everything, was dead-headed in this world and expected to be in the next." This saying, though made twenty years ago, may be looked at in the light of a prophecy; for it has become literally true that without photography the illustrated newspaper of to-day would be impossible; and this change has taken place within the last decade.

It is told of the last of the Harper Bros. that, when dying, he called his son to give him some advice in reference to the management of the business which was about to fall to his charge. Said he, "above all things take care of the *Weekly* (referring to the illustrated paper which bears their name). Do not be tempted by new processes to deviate from the old and well-tried methods of engraving. If a rival does undertake to give the events of one day in an illustrated form on the next, and you should come along like the old lumbering stage coach one week later, remember you put it on record; you put it on record." The idea of recording current history carefully and accurately is the true duty of journalism. But I regret to say that the press, instead of educating the public up to a healthy standard, seeks to pander more and more to the demand for sensational and untruthful rubbish, the result being our people's minds are ruined by

over-much reading, and when a paper publishes an illustration of an event a week after its occurrence, the public look at it as a page of ancient history. The same paper that would not allow plates produced by photography to be used in its pages during the life of its founder now uses them very largely.

To give you an idea of the varied uses of photography on a newspaper, we will first classify the different kinds of illustrations.

There are 1st, portraits; 2nd, landscapes—views of all kinds, 3rd, events—news events; 4th, cartoons, etc; 5th, ideal pictures; 6th, maps and the various mechanical drawings.

All portraits published are from photographs. The only exceptions that I remember were the late A. T. Stewart, George Eliot, Labouchere, the present editor of the *London Truth*, etc. All landscapes where accuracy is required, as, for instance where architecture is a prominent feature, photographic views are utilized. Without photographic portraits our modern cartoon would be impossible. Then for news events, instead of sending an artist to sketch an event as formerly, the local photographer is telegraphed to attend to it. Here is the first aid of photography to bring the picture into the publication office. It is a messenger that brings the facts without coloring or exaggeration. Well would it be for the typographical side did they have such truthful reporters. But then although the photograph brings to the editor the facts—the naked truth as it were—they need some modification before publication.

For instance, in the case of a man's portrait; if not a recent one it must be altered to show his increased age. But it would be a dangerous proceeding on the part of any illustrated paper to take the same liberty with a female face, particularly if the possessor is a live woman. In the case of pictures for commercial purposes, the particular object to be advertised must be brought out most prominently. The camera, as we all understand, does not show the partiality that the advertiser wishes; for instance, his two story store must become a five story one, with throngs of customers passing in and

out and loaded trucks at the curbstone; or if it is a factory it must extend a block or two further down the street, all the neighboring buildings shrinking into insignificance in comparison with it. I am afraid I am giving away too many trade secrets. I only mention these things in order that when you see "from a photograph" under a distorted illustration, you will understand that it is not due to any idiosyncrasy on the part of the photographer. And here let me state something that may not be considered by those who think the day is not far distant when we shall publish all illustrations direct from the camera without the intervention of artist or engraver, as many papers are now doing; and bye the bye if there is any glory attached to the matter I claim here that your worthy president, Mr. Newton, made the first negative, and I attended to the remainder of the process of producing the first illustration direct from nature in a daily newspaper without the intervention of artist or engraver. I have many examples of such a process as is now used in the illustrated press of to-day, and the difficulty in the way of its more general adoption will be found to be in the fact that very rarely will a subject be photographed with the composition, arrangement, light and shade, and possess sufficient spirit for publication in fac-simile.

At present all photographs are altered to a greater or less extent before presentation in the newspaper. This is done after the subject is photographed the second time. We have seen how photography brings the matter to the editor's hands.

Now we come to the second use of photography. The photograph is now either photographed on wood, or an untuned photographic print is made on plain paper.

On this latter an artist traces the design with a pen and india ink, and here the alterations are made. If a view, the artist introduces figures, alters the light and shade, and sometimes changes the composition. When he has obtained all the assistance he requires from the photograph, he bleaches it away by pouring over the photographic print, on which is his india ink drawing, a solution of bichloride of mercury in alcohol. This

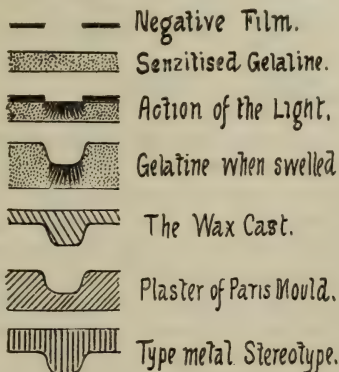
leaves his drawing on perfectly white paper. Now in case of the photograph on wood, the addition of figures and other changes I have spoken of are made over the photograph-covered wood block before it passes to the engravers, where it is changed still more. In the case of a wood engraving, photography is used but twice, ending with the placing of the subject on wood; so we will dismiss it. But with the india ink drawing on paper photography must again be called into use to produce a printing block. The various processes for accomplishing this are innumerable, but they can be classed under three heads. 1st, what is called the etching method, 2nd, the photo-relief plate method; 3rd, the photo-electrotype. Of the three each has its advantages. The first or the "etching method" gives a plate of zinc usually in which the "whites" or hollow portions of the plate have been dissolved away by an acid. The second or photo-relief plate method produces a printing plate in stereotype metal, and the third yields an electrotpe. All three depend on the rendering insoluble of gelatine or albumen when, in combination with a bichromate either of potash or ammonia, it is exposed to light. The peculiarities of the resulting plate I will state briefly. The zinc etching method produces the most artistic result, but it is not sufficiently mechanical in its manufacture to ever be much used here. It necessitates the personal attention of a man with artistic judgment throughout the whole process of the etching. In Europe, where artistic labor is poorly paid, they can afford to work this process successfully.

Mr. GRENIER. I would like to ask if the engraver can not work better from a photograph on wood than a drawing?

Mr. HORGAN. That matter depends a good deal on the taste of the engraver. I think if the engraver prefers to work from a drawing on wood the results are better if the drawings are made large and reduced by photography on the wood.

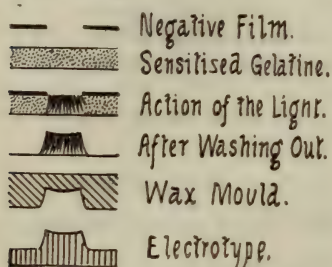
Mr. HORGAN continued his remarks, illustrating them by the following diagrams on the blackboard. I have said there were three classes of photo-relief plate processes

used in the newspaper. The photo-engraving, giving a plate in type metal; the photo-electrotype, yielding an electrotpe, and the etched plate, being usually a zinc plate. A peculiarity of the photo-engraved plate is that the face or printing surface of the line is slightly convex, the corners being rounded off. To show how this occurs I will draw a section of a single line showing the various steps of the process.



First there is the negative film; the space between the ends of the two lines represents a transparent line in the negative. This is brought in contact with the sensitized sheet of gelatine, the action of the light being greatest in the centre of the line and least at the edges. When the negative is removed and the sheet of gelatine placed in water the portions not acted on by light swell, not leaving a perfectly sharp angle at the junction of the hardened and unhardened portions. At this stage in the process begins the rounded corner of the line; then in each of the succeeding steps—the casting of this swelled gelatine film in a wax composition, moulding from the wax in plaster of Paris, and particularly in the last operation of casting the type metal stereotype in the above plaster mould there is a tendency to lose the sharpness of the corner of the line, the result being a line with a convex face. Now in very careful magazine and book printing an artistic printer may take advantage of the convexity of the printing surface of the lines to produce lines broad or narrow according to the degree of pres-

sure brought to bear on them. This is regulated in what is called "overlying," an operation which requires too much time for ordinary printing.



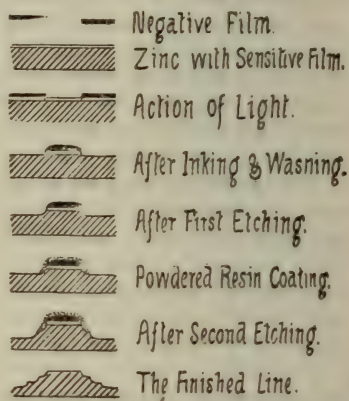
The above diagram exhibits the several steps in the production of a photo-electrotype line. A sheet of gelatine is acted on in the same way as in the photo-engraving method, the difference being that the unhardened parts of the gelatine are washed away instead of being swelled as in the former method, the hardened portions of the gelatine, or the lines, being left in relief, of which an electrotyle is made in the ordinary way.

Now the face of the line produced by this method is slightly concave, and for the same reason as is the convexity in the photo-engraving, there being a small part of the gelatine at the edge of the line which is not rendered perfectly insoluble, thereby absorbing sufficient moisture during the washing-out process to raise the edge of the line, producing this convexity.

Now for reliable newspaper work this is the better line; it is sharp and highest at the corners where the wear is the greatest in the printing; it yields a square, honest line, and furthermore the spaces between the lines are longer, consequently there is less danger of their printing up than in the photo-engraved plate.

Zinc etching is shown by the above diagrams of a section of a single line through the several stages of the process. A polished zinc plate is coated with an extremely thin film of albumen sensitized with bichromate of ammonia, and after exposure to light under a negative, the zinc plate is rolled with a greasy ink over the sensitized albu-

men film. On a subsequent washing with a soft sponge and water the albumen is removed from the portions unacted on by the light, carrying with it the greasy ink and leaving the design corresponding to the



transparent portions of the negative in a film of hardened albumen covered with greasy ink, this latter protecting the lines so covered from the acid in the after operation of etching, the protection being reinforced by dusting the line with a resinous powder, usually Dragon's blood.

Mr. HORGAN then explained the succeeding steps in the process, ending with a diagram of a section of the finished line showing the steps down the sides corresponding to the number of etchings the plate has received. He closed by saying that though the last or etching process produced the most artistic results, it necessitated the supervision of artistic labor throughout, and therefore could not be worked profitably in this country.

He then presented the illustrated newspapers of France, Great Britain, Italy, Spain, Germany and the United States, all containing examples of work printed from photographically produced plates.

Mr. GRENIER. I think that the relief processes are done better here in America than in Europe.

Mr. HORGAN. That depends upon how you look at it from a mechanical standpoint, yet, in artistic results, France is ahead of the world. All the pictures I exhibited here

were printed in a rapid steam printing press.

Prof. LAUDY. I have listened with a great deal of interest to this talk, and I would like to ask whether these plates can be locked up with ordinary type and printed with it?

Mr. HORGAN. All these plates are relief plates, and have been locked up in a form and printed in a rapid printing press. Upon the speed at which the copies are printed depends the excellence of the work. With the German papers the speed is not as great as in the *New York Herald*, and the result is correspondingly better. Some of these pictures were printed at the rate of 800 an hour; the *New York Herald* has the highest rate of speed, *Puck* and that class of papers, probably about 1200 an hour. The relief plates are the same; in all cases the results depend on the slowness of the printing.

Prof. LAUDY. Are these all from metal plates or some form of gelatine plates? I do not claim to be a newspaper man; but thirteen years ago I was employed with Mr. Moss and am familiar with his process. I am very much delighted to find that photography is being used in this way. A great deal of credit is due to the labors of Mr. Moss in the introduction of this process. To make a plate that would correspond with a wood-cut was one of our difficulties. The plates for *Harper's* and *Frank Leslie's* and the *Scientific American* were often returned to us because they were not sufficiently good.

I visited Mr. Moss about a year ago and he showed me all over his establishment, nor did he hesitate to take me into his "Blue Beard Chamber." He finishes a plate in four hours. The other processes I have not paid any attention to.

Prof. LAUDY. Could the gentleman say if any improvements have been made in the *Graphic* process?

Mr. HORGAN. The process used on the *Graphic* is mine, and I am ashamed of the results; but the photographic portion of the process is perfection. It is a photo-lithographic method. It will retain the slight-

est detail in any drawing placed before the lens of a camera, but in the after process of printing as they now conduct it there, the result is butchered. It is printed at a speed of 800 or 1000 an hour, which is not very slow for an illustrated paper. I don't suppose *Harper's* is printed much faster. By multiplying its presses the *Graphic* can produce a large edition in a day. Within an hour a drawing can be taken from the hands of the artist and be made ready to print in the lithographic steam printing-press, the principal facts in the accomplishment of this rapidity being that a very intense negative is not required. The other relief plate processes require a very intense negative, the consequence being that the very fine lines are filled up, or the negative is undertimed in order to stand the proper amount of intensification.

The PRESIDENT. We have here some illustrations which Mr. Bierstadt, who was unable to be present himself, has sent.

A vote of thanks was then unanimously passed to Mr. Horgan for his paper and to Messrs. Moss and Bierstadt for the exceedingly fine specimens of their relative processes.

Adjourned.

The Society of the Amateur Photographers of New York.

THE Society held another business meeting on the evening of Tuesday, May 13, at the same time and place as previously. A committee of three were appointed to revise the constitution, and offered amendments that will be brought before the next regular meeting.

Mr. JANEWAY then presented a plan for systematizing the work of the Society by dividing it into sections, each to have a director and secretary, and the members to select with which section they prefer to work.

Mr. WILSON offered to lecture for the benefit of the Society, for which he received thanks. Several donations of books and newspapers were made.

Mr. BEACH then exhibited Roche's new

enlarging camera and other apparatus, and Mr. Gilder his instantaneous shutter, in which he has recently made an improvement by rendering it automatic. A sufficient amount in money was pledged to insure the speedy location of the Society in suitable quarters. Mr. Beach also exhibited some lantern slides, when the meeting adjourned.

Amateur Photographers.

THE Lowell Association of Amateur Photographers met by invitation at the studio of N. C. Sanborn last evening and were entertained with a demonstration of developing by Mr. Sanborn, who used his new formula and produced some fine results. Sample negatives and prints were exhibited by several persons, and five new members were received. Charles E. Edson was elected librarian, and thanks for publications given the Association were voted to E. & H. T. Anthony & Co., New York. Mr. Sanborn also received a vote of thanks for his courtesy.—*Lowell Daily Courier*.

Seavey's Catalogue.

L. W. SEAVEY, the famous background painter, has just issued a nice neat little catalogue of a few of his grounds and accessories, which any one may have on application.

H. A. Hyatt's New Catalogue.

ANOTHER immense catalogue of 192 pages comes to us from the Mound City. It is astonishing how much time and means have been expended in the preparation and printing of catalogues of photo. materials, in the West particularly. This one is not an exception, for it presents an unusually complete list of photo. materials, card stock, mats, frames, etc., to supply the ordinary and extraordinary requirements of the city or suburban professional or amateur. H. A. H. is evidently a *live* man, and the people know it.

THE special attention of the reader is invited to a short paper by Mr. J. H. Kent on another page, headed *Photography without Silver, or Gold, or Paper*.

A Disastrous Fire.

WE regret to be obliged to record that on the morning of the 25th ult. a disastrous fire occurred in the manufacturing establishment of the Scovill Mfg Co., in Pell Street, this city. The building and contents were a total wreck. We presume the Company will soon be again in operation, and ready to supply the demands of the trade.

Photography.

THE first and second numbers of a new semi-monthly photographic journal bearing the title of *Photography* have come to hand. It is published in Chicago by Mr. J. Sawtelle Ford, a gentleman already well known, especially in picture and art circles.

Another Novel Gallery in Chicago.

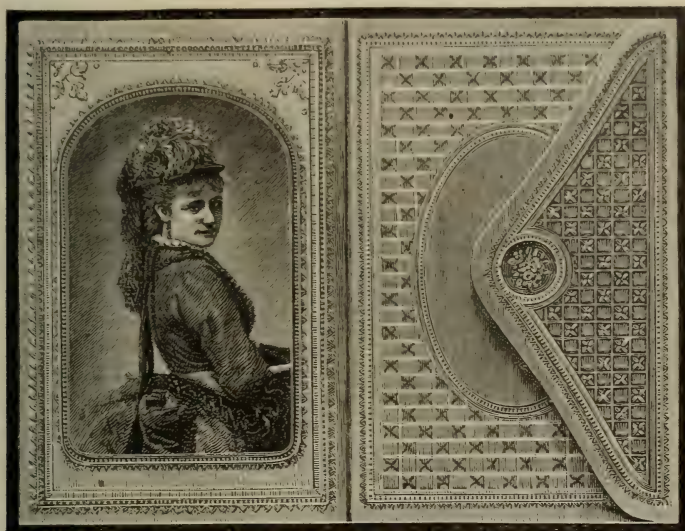
MESSRS. COULTER & HODGES have opened a new gallery in Chicago on Indiana Avenue, among the private residences. The patrons are not required to pay until they are first shown and have expressed themselves satisfied with the proofs. Everything about it is elegant and cosy, and the operating room is admirably arranged. Dallmeyer's rapid rectilinears are the instruments used.

To be Used Exclusively.

FOR the interesting series of experiments in photographing men and animals in motion which Mr. Muybridge proposes to conduct in Philadelphia during the coming summer, the Eastman Special dry plates will be exclusively used. We have already received an order for 100 dozen for that purpose. Twenty-two Dallmeyer lenses are to be employed. Mr. Muybridge's success is undoubtedly assured.

Temporary Removal.

MR. JOHN CARBUTT, who is about to establish himself permanently at Wayne Junction, on the Bound Brook Road, gives notice of his temporary removal to the N. E. Cor. of Tenth and Filbert Streets, Phila.



Anthony's New Embossed Envelope.

THIS novel and handsome envelope supplies a long expressed demand, forming an elegant receptacle for either the carte de visite photograph or the bon ton ferrotype. It is embossed on fine, delicately toned paper, from an entirely new design, and may be had in assorted tints with oval and arch openings. They are put up in boxes of four packs containing twenty-five each, at \$1 00 per 100.

Illustrated Price List of Mr. W. D. Gatchel.

ANOTHER attractive catalogue has just reached us, this time from our old and much esteemed friend, Mr. W. D. Gatchel of Louisville, Ky. Like several others it contains the fine list of card stock of the Collins Co., and, of course, a large variety of the usual photographic supplies.

No man in the West, perhaps, is more widely known to the photographic trade, and this useful evidence of renewed enterprise and vigor will both serve and gratify hosts of friends.

THE report of the Ass'n of Oper. Photos. of N. Y., etc., are omitted for want of space.

Note Book of Photography.

SOMETHING that every amateur and landscape photographer should have is Anthony's Note Book of Photography. It is a nice little book bound in cloth, and contains perforated leaves with numbers, which may be instantly separated and gummed to the negative. It is also a complete register of the date, No., subject, lens, focus, stop, time of day and maker's plates, with space also for remarks. Price 25 cents.

A LATE amateur convert, on looking over our instruction book, brightened up with a smile and said: Its all right; I find one can remove the skies with it.

CORRESPONDENCE.

WATERTOWN, WIS., March 25, 1884.
MESSRS. E. & H. T. ANTHONY & CO.

Dear Sirs: Enclosed please find Money Order for the PHOTOGRAPHIC BULLETIN for this year. It is very interesting and full of information.

Respectfully,

H. C. DOBRATZ.

HULL, CANADA, March 6, 1884.

E. & H. T. ANTHONY & Co.

Dear Sirs: I enclose two dollars. Please send along the BULLETIN for 1884, as I look for it eagerly,

Yours,

F. X. FILTEAU.

MUSKEGAN, MICH., March 7, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gents: Enclosed please find P. O. Order for the BULLETIN (illustrated) for 1884, a welcome visitor, which I eagerly look for every month.

Yours truly,

WM. MCCOMB.

TAMPA, FLA., April 20, 1884.

E. & H. T. ANTHONY & Co.

Gentlemen: I will say that I have now received all the numbers of the BULLETIN; there was only a delay. Am sorry to put you to so much trouble, but could not do without it.

Respectfully,

J. C. FIELD.

NEW YORK, May 12, 1884.

E. & H. T. ANTHONY & Co.

Dear Friends: Letters are pressing in even from California concerning the etching process, and I have a summer's work before me should I attempt to answer all.

Will you therefore please announce in the next number of the BULLETIN that I will furnish for the following number a *complete* description of the process from cleaning the glass to the finished etching, *intaglio and relief*. I hope to make it interesting; I *know* it will be reliable.

Yours truly,

GEO. G. ROCKWOOD.

CAMBRIDGEPORT, MASS., April 12, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gentlemen: The New England Photographic Association is organized for the year under the following officers, viz., A. A. Glines, of Newton, *Pres.*, and H. W. Whitney, 563 Main St., Cambridgeport, *Sec'y.*

H. W. WHITNEY, *Sec'y.*

The Prosch Shutter.

[Extract from a letter to Mr. H. T. A.]

I WILL not close without expressing my appreciation of the excellence of Prosch's instantaneous shutter, which I have tried repeatedly on moving objects at close quarters with uniformly good success; and it gives me pleasure to say, that of all the many shutters with which I have experimented, this one is the best. Light, yet strong, neat and safe, rapid and easy of manipulation, it seems to combine all the good qualities which a perfect shutter should possess; and with such an instrument on a Dallmeyer rapid rectilinear, with an Eastman special behind it, that object must be swift indeed that could escape being caught.

Very respectfully yours,

VON SOTHEN.

MERIDEN, CT., April 10, 1884.

A. PROSCH, ESQ.

Dear Sir: Yours of the 8th is at hand and shutter received all right. It is a perfect little beauty and works like a charm. I am well pleased with it. It is my beautiful ideal of a shutter, and is by far the handiest thing I have yet seen.

Yours very respectfully,

E. J. MANSFIELD, M. D.

And now Mr. Reid Retires.

THERE has been another change in the firm of Inglis & Reid, of Rochester. Mr. Walker, the gentleman who established the business, withdrew a short time ago; and now Mr. Reid retires, leaving Mr. Inglis the sole proprietor.

A YOUNG man who is thoroughly acquainted with the photo. stock business may find an opening by addressing

PERCY A. MCGEORGE,

Care of E. & H. T. Anthony & Co.

591 Broadway, N. Y.

FOR JUNE, 1884.

VOL. XV.—16

that all will be able to purchase the expensive apparatus one sees in the shops; on the contrary, there will be several who, either from choice or necessity, conduct their operations with materials of the most simple and inexpensive description. It was so with me; I could not afford to purchase elaborate apparatus for washing prints and plates, so I from necessity made use of a large stoneware basin which I used in my dark room for washing purposes. This basin also did duty as a print washer, after being (as I thought) thoroughly washed from all traces of the developing chemicals.

However, to be brief, I must state that after giving my prints a good soaking, I used to find each time, on looking at them, that they were gradually assuming a light brown tint, and on further immersion getting darker and darker. After repeated trials of this description, I came to the conclusion that there must really be some trace of the developing chemicals left in the basin, after all my careful washing. This brown color on the print was very vexing, especially with vignettes, so I thought the best thing to do would be to find out the cause. To do this I made dilute solutions of the developing chemicals, and poured each on a separate piece of sensitized paper, and discovered that the principal offender was the pyro., which turned the paper a dark brown color.

After this, of course I was very careful to keep a separate basin for prints alone, and since that I have never had any cause to complain of the discoloration of my prints.

Therefore, what I wish to convey to the minds of beginners is, to always use a separate utensil for washing your prints in, and to keep it exclusively for that purpose.—*London Photo. News.*

Typographic Printing Blocks from Half-tone Negatives.

BY C. T. CHESTERMAN.

A GREAT deal has been written on the above subject of late, and some fine speci-

mens have appeared in several trade journals; the *Gewerbehalle*, and *Die Blätter des Münchener Gewerbe Vereins*, containing many illustrations by it. This, however, is not of so much importance to the photographer (on account of the *modus operandi* being protected by patents) as to publishers. Take, for instance, the *Münchener Kunst Verlag*, which is doing a very remunerative business with the process of Herr Meisenbach, and the Heliotype Company in America, who own the rights covered by Ives' patent.

Although the processes totally differ from each other, according to the specifications, yet the results are identical, with the exception of some of the earlier specimens by the Ives' process, which are cross-hatched, like the simili-gravure blocks of M. Petit; but they are all equally good, only very difficult to imitate, however carefully one may study the somewhat complicated specifications. This presumption on my part caused me to publish the following details for attaining the same ends. It may be well, however, to recapitulate the facts which led to this particular mode of operating.

Between the year 1868 and 1872, Mr. Scamoni experimented extensively to obtain means for rendering his helio engraving process suitable for half-tone work, and it was upon some "cross-hatched" transfer paper prepared during that period, and which had been stowed away entirely forgotten, that our first successful attempts were made.

Being thorough masters of gelatine relief-making, we did not put much faith in the use of a V-shaped instrument for planing or scooping out lines with, but started at once with the means we had previously tried for giving a stippled effect to negatives intended for half-tone—helio-gravings. At first we tried the interposition between the negative and sensitive photo-litho paper of a collodion film impressed with suitable lines; this, however, did not lay very flat unless it was caught under water upon the negative itself, and then, nine times out of ten, it would split up from the glass, bringing the negative with it. This mode we

therefore abandoned for the following. Between the subject to be photographed and the camera, a copying board is placed, made especially for the purpose, so that the part carrying the board can be raised or lowered (similar to a steam-boat chimney), whereas the feet remain stationary after the focussing is completed. To this board we affix paper covered with a grain or stipple; this time machine-ruled diagonal lines replaced the stipple. After this is brought into focus, we note the exact position of the ground glass, lower the board or screen, and proceed to focus the subject; after this is exposed, the lens is capped, the ground glass drawn along to its former position, the screen raised, and the lines or stipple exposed for a certain length of time according to the subject and strength of lines required. The lines can also be printed in different colors to suit the subject, (such as sepia, carmine, or blue). The negative is now developed, and we have a picture cut up, as it were, into strips in the shadows, but free from anything of the kind in the high lights. Now this would seem to be just the thing that was wanted, but the resulting relief blocks did not fulfill our anticipations, so we had recourse to another method as follows. A matrix is taken in plaster of a metallic plate or litho. stone which has raised or indented lines engraved or etched thereon; from this plaster matrix, after perfect desiccation, a mould is taken in printers' roller composition—*i. e.*, glue and glycerine; this, when set, takes color very well, and after being rolled up with printing ink can be impressed just the same as an elastic stamp on to any existing negative, to which it imparts either black lines or diamond-shaped dots according to the kind of plate used, raised or indented; afterwards a transfer is made to zinc in the usual way, and etched. This method does for coarse work, and is very inexpensive, as the elastic moulds last for a considerable time.

As this did not give results suitable for fine work, such as we had seen in the *Photographic News* about two years back, we tried several other ways which we had pre-

viously used, which brought us to our long-forgotten paper previously mentioned. This paper was prepared by giving a well-sized paper of even texture five or six coats of a mixture of size and white lead, allowing each coating to dry before the successive one was applied; then it was glazed by pulling through the litho. press upon a smooth stone; afterwards it was slightly damped and pressed in contact with a plate which had been used for impressing a border, and fine hatchings for book-covers. Of course, we could only use the centre of this, containing about six square inches of cross-hatched lines inside the border. Formerly, this was worked upon with a lithographic crayon, and portions cut off and used where required by transferring them to stone or glass. Now it occurred to us that a design in fatty ink could be printed, instead of drawn thereon with a lithographic crayon, and as we required a picture in half-tone suitable for transferring to zinc, what could give us better impressions than a collotype plate? So we tried it, and found it perfect; and anyone who can make a collotype plate, and knows how to do zinc etching, can reproduce type high blocks with half tints equal to any done by the existing methods, and without fear of infringing patent rights.

Eventually, such ribbed surface paper would become an article of commerce if there was a demand for it, and transfers made thereon could be given out to experienced zinc etchers, so that collotypists could easily undertake such work, as there is no more difficulty in making an impression upon such paper than upon fine chalk-surfaced paper; it must, however, be borne in mind that a good stone-to-stone re-transfer ink must be employed instead of the ordinary printing ink.—*London Photo. News.*

THE well-known chemist, M. Lecoq de Boisbandrau, has made known a very simple and ingenious method of filtering liquids containing very finely divided precipitates, which, as most experimentalists know, will often pass through the closest grained filter

paper. For instance: in preparing a silver bath by saturating a strong solution of silver with iodide, and then diluting, the opalescent appearance produced by the fineness of the precipitate cannot be got rid of by one passage through a single filter; two filtrations through two folds of filter paper usually being necessary to obtain absolute brightness in the filtrate. By the means designed by the chemist we have named this will be obviated. He boils a number of pieces of ordinary filter paper in *aqua regia* till a thick fluid is formed. This is next poured into a large quantity of water, and the precipitate well washed by decantation or otherwise. A portion of the flocculent mass is mixed up with water and poured into a filter. After the latter has drained it will have become compact in texture, and its pores filled up by the precipitate to such an extent as to permit its thoroughly filtering out the finest precipitates. In place of preparing the filter in this manner some of the prepared paper may be stirred up into the fluid to be filtered, when it gradually fills up the interstices and pores as the filtration proceeds. We should imagine it would be necessary to pass the first portion of the filtrate through the filter again.—*British Journal of Photography*.

The Influence of Different Substances upon the Gelatino-Bromide Film.*

BY A. AUDRA.

THE desire to shorten the time for exposure of gelatine plates induced me to test the effect of different substances upon the sensitive film after exposure and before developing.

For this purpose I poured upon an exposed plate in parallel stripes different solutions, namely, solutions of chrome alum, common alum, hyposulphite of soda, bichromate of potassium and water, to which was added a small quantity of ammonia. These solutions I allowed to act for about a minute, and then I washed the plate thor-

oughly, letting the water run in the direction of the stripes to prevent a mixture of the solutions; then I developed in the regular way with the iron developer. Upon the parts treated with hyposulphite of soda, and the water and ammonia, the image appeared almost instantly; afterwards with water only; then upon those containing alum and chrome alum, and last upon the part treated with bichromate of potassium. During the normal duration of exposure the relative density of the several stripes remained the same, while the high lights became brighter. Upon the first two stripes the image appeared stronger and somewhat foggy, but more transparent and weaker upon all the others. From these experiments I came to the conclusion that the alkaline solutions, as hyposulphite of soda, and water with ammonia, accelerated the development, fogging the image more or less, and that the acid solution retarded the development and required a longer period of exposure. In consequence of this I discontinued with the latter, but have made numerous experiments with the hyposulphite of soda and the ammonia.

I commenced with a bath containing hyposulphite of soda and water, 1 : 1,000, and plunged one-half of an exposed plate into the same for one minute. After washing this one-half it developed with lightening rapidity; when the image began to appear upon the other half of the plate, that upon the first half had already become almost invisible by fog and over-development. I then took, therefore, ten times the quantity of water in proportion to the bath, and even then the action was a very quick one; the result was better, and the fog that appeared did no harm to the negative, but, on the contrary, gave it a uniformity the other half did not possess. To continue the experiment I increased the volume of water again ten times, so that I had now a proportion of 1 : 100,000 or about one gram of hyposulphite of soda to 100 liters of water, and even with this very limited quantity of soda the bath still acted very energetically.

To obtain therefore a very sensitive plate put the same after exposure for one to two

* Translated from *Photographisches Archiv* by H. D.

minutes into a solution of *one part of hyposulphite of soda to 10,000 parts of water*; wash it well and develop. This formula seems to me to be better than the one I previously recommended. By adding to the developer a little hyposulphite of soda, the action becomes more certain and the picture will not be spoiled.

Similar results I obtained also with water containing ammonia. Five parts of ammonia to 100 parts of water gave a completely fogged picture; 1 : 100 was still too strong; $\frac{1}{2}$: 100 seemed to be the right proportion; but, I repeat, hyposulphite of soda acts much better, and the ammonia solution I mention as a matter of theory only.

I have also treated the formulæ recommended by several operators, to plunge the plates into pure water before developing, but this has given me very little satisfaction. One half of the plate so immersed in the water developed much slower than the other out of the water, but, after the developer had acted for one to two minutes, the plate gained what it lacked in the beginning, and after fixing there was hardly any discernible difference. The condition was different though, after having the plate in the water for quarter of an hour or longer. The immersed half appeared as before, slower than the other; but the tones became so much brighter that the fogging increased. In the fixing bath this half became so opaque that I could not remove it even after leaving for twelve hours in the fixing solution. Ascribing this appearance to the salts contained in the well water, I repeated my experiments with distilled water, but to my surprise with the same results.

Many conclusions can be drawn from these few experiments. The first and most important of these is, that the gelatino-bromide of silver film is extremely sensitive to extraneous influences. Does it not show that gelatine plates exposed to alkaline or acid gasses will fog or lose their sensitiveness? Coming in contact with paper or cardboard containing traces of hyposulphite of soda or chloride, is it to be wondered at if a trace or impression remains upon the plate? If, lastly, washing in pure water for

a few minutes produces fog, cannot the moisture of the air under prolonged action exercise the same influence?

My opinion is supported by the fact that in all other tests non-exposed plates gave the same results—fog where the plate came in contact with hyposulphite of soda, fog also on such parts as remained in distilled or well water for a longer time than fifteen to thirty minutes.

A Modification of the Alkaline Developer.

OUR readers know that the ordinary developer containing ammonia, bromide, and pyro., does not possess permanent alkalinity, for its strength is liable to variations on keeping, on account of the first-named constituent, ammonia. Some of the ammonia gas is sure to find its way out, and the solution deteriorates in strength. The necessity for the presence of some alkali is, we need scarcely tell our readers, to increase and to hasten the reducing power of the pyro. The re-agent used to accomplish this end when pyro. is used in the laboratory for determining the quantity of oxygen in a gas analysis is caustic potash. As long ago as seven years the use of caustic potash in alkaline development was discussed by Captain Abney, and we have been able to successfully develop many plates by means of the alkaline hydrates, but we wish first to point out what may be important applications of them. We wish to show how these hydrates of potash and soda may be turned to account, while those who prefer the use of ammonia may still have the pleasure of using it.

Caustic potash and caustic soda are more powerful alkalis than ammonia, and are capable of turning ammonia out of a combination. If caustic potash be added to a solution of a salt of ammonium, ammonia is set free, and may be recognized by its smell.

To apply this to purposes of development, we made up the following solutions:

Pyro. Solution.

1½ grs. of pyro. to each ounce of water.

Bromide Solution.

Bromide of ammonium, . . . 35 grains.
 Water, 1 ounce.

Alkaline Solution.

Caustic potash, 20 grains.
 Water, 1 ounce.

The last two solutions are calculated to be of the relative strengths necessary to form, by adding them in equal proportions, potassium bromide and ammonia by double decomposition. In fact, providing the chemicals are pure, if the relative quantities by weight of the two compounds are as 7 to 4, there should be neither bromide of ammonium nor caustic potash in a mixed solution; but a slight variation in the chemical purity will not affect the practical result.

Trying this first on a quarter-plate that had received the usual exposure, we took one ounce of the pyro. solution, and ten to fifteen drops each of the bromide and alkaline solutions. The image came up quickly, and reached good density. By varying the exposure, and with it the proportions of bromide and alkali, we were also able to get successful results. The plates we used registered 24 on Mr. Warnerke's sensitometer, and gave good images. It is not easy to give a formula which will suit every class of plates, and each manipulator, of course, prefers to suit his own taste in this respect; but, with ordinary exposures, good results may be obtained without using the alkaline solution in a larger proportion to the bromide than is necessary to produce complete double decomposition. A larger proportion of the caustic potash may be used if required; but, in that case, we are no longer using the ordinary developer.

It is a question mooted now and again, whether we cannot get rid of the use of ammonia altogether, and relieve photographers of the inconvenience arising from its fumes during development; and here we come back to a matter already touched upon, the use of caustic potash in place of ammonia, no ammonium salt being used. It was in this direction that we first experimented, and with success. The following was the formula we used:

Pyro Solution.

1½ grs. of pyro to each ounce of water.

Bromide Solution.

Potassium bromide, . . . 20 grains.
 Water, 1 ounce.

Alkaline Solution.

Caustic potash, 20 grains.
 Water, 1 ounce.

To one ounce of pyro we take fifteen drops of potassium bromide, and commence development with five drops only of the alkaline solution, adding more if required.

This developer, with two kinds of plates on which we have used it, gives good results, but more pyro stain was observed than with the other formula given. This increase of stain is also a defect of the potash carbonate developer, but it may be removed by an application of the clearing solution of alum and citric acid. We have not yet succeeded in getting green fog with this developer, even on forcing the development of an under-exposed plate; a large excess of caustic potash only brought about increased pyro stain. We have not yet tried sulphite of soda with either of these developers.—
London Photo. News.

WE have received the February and March numbers of the new photographic journal *A Arte Photographica* which maintains the excellent character of the first issue. The articles are interesting and instructive, and the illustrations very fine, especially the one published in the latter, representing a picturesque old mill with a roof thatched with grass, on the borders of a lovely stream which dashes along over its rocky bed, forming numerous little cascades as it winds its way onward.

The journal has a large corps of correspondents, comprising many well known photographic amateurs, of whom the most distinguished are Mr. Carlos Relvas and Miss Margarida Relvas. It would well repay any one acquainted with the Portuguese language to subscribe to this valuable periodical.

The Oxyhydrogen Lime Light.

BY ST. VINCENT BEECHEY.

FEW of your correspondents have had more experience with the lime light for lanterns than myself. For forty years I have lectured every winter and never had an accident. The accidents referred to in your article of the 4th instant were, I suppose, those in or near Bolton, and you will remember they were both caused by using ether for hydrogen. I have never seen the apparatus, but, as you know, ether is extremely volatile, the vapor often catching at a light several feet off.

But the ordinary lime light is of two kinds. The best for large pictures is that in which the two gases are mixed in a small chamber in the jet before impinging on the lime cylinder. This kind requires the use of two gas bags, and is perfectly safe provided equal pressure is kept on both bags. It sometimes happens that either people or articles of furniture cause the pressure board of one bag to catch, whilst the other, of course, goes on. But this is manifest to the exhibitor at the moment by the light, and ought never to be allowed to continue to a dangerous extent. By increase of equal pressure this light may be made equal to pictures of twenty-five feet diameter. I have often had such in the large Town Hall of Ashton.

The second kind of lime light, and the best for pictures (say) fifteen or sixteen feet diameter, is formed by what is called a "blow-through" jet. In this jet the gasses mix only at their exit from the tube, and cannot by any possibility cause an explosion. They are safer than any kind of paraffine lamp; for the heat caused by four or five wicks is intense enough, I should think, to volatilize the paraffine as dangerously as the ether above referred to. The blow through jet requires only an oxygen bag, the hydrogen being supplied from the ordinary gas jet.

There is another very pretty little oxy-calcium light (besides those in which alcohol in a spirit lamp supplies the hydrogen for the oxygen to blow through) which I

invented many years ago, and used in my trinoptic lantern, described in Mr. Chadwick's interesting book on the *Magic Lantern*. It consists of a fountain argand lamp, having in the center of the half-inch circular wick a small brass tube or jet of one sixteenth or one-twelfth inch bore. This feeds the burning wick with oxygen and creates a small, white, intense light, which is again increased by the suspension of a lime ball half an inch in diameter by platinum wire right over the centre of the wick, which, becoming beautifully incandescent, unites with the flame and greatly intensifies it. This light is perfectly safe in any hands. The oil used is salad oil.

Now, one word as to the electric light: My Rectory is lighted by it and I have a Gramme dynamo. But the electric light will only do for the lantern where the apparatus is fixed and permanent, as for large discs the *arc light* must be used. This is the case at the Crystal Palace. Incandescent lamps are seldom used of more than twenty-candle power. In these the *shape* of the light is bad for definition, and it is not sufficient for more than a small disc. Accumulators are as yet far from perfect, and it would require a very large number of them indeed to keep up an arc light for two hours. Depend upon it there is no light for the lantern equal to the oxyhydrogen lime light, and none more safe than the blow-through jet. — *British Journal of Photography*.

The Tropicals.

MANY of the leading photographers and amateurs now use the Tropical Dry Plates exclusively for portraiture and out-door work. They afford good contrasts and admit of great latitude in exposure. With them there is not the slightest possibility of frilling or the negative slipping off the glass, and the use of ice or alum in the solutions is altogether dispensed with. They are acknowledged to be *par excellence* the hot weather dry plate.

TRY DERMALINE.

Concerning the Sensitiveness to Color Collodion Process or the Correct Representations of Colors by means of Black Photography.

BY DR. H. W. VOGEL.*

I. Introduction.

I have hitherto mentioned in this journal that, after an investigation of eleven years, I have succeeded at last in producing collodion plates which are at least *eight times* more sensitive to the yellow of the spectrum than to the blue, enabling one to make with the same a copy of the table of colors of my instruction book, in which blue, yellow and rose are reproduced in natural proportion of tone. This has awakened a lively interest in scientific and photographic circles, in consequence of which the Photographic Society passed the resolution to acquire the process and publish it for the benefit of all.

In accordance with the determination of the Society I bring this process now before the public.

I begin with the strictly practical part, and at a later date shall give a more detailed description of my experiments.

Ordinary portrait collodion shows the highest sensitiveness in the dark blue part of the spectrum, incorrectly called indigo blue; only after a very long exposure a sensitiveness to the green, yellow and red appears.

According to the principle first demonstrated by me this sensitiveness to green, yellow and red can be increased by other bodies absorbing these rays.† Most of

these bodies act best upon collodion dry plates, and a proportionate few only are suitable for the wet process. To these belong the dyes known under the name of eosine. In trade there exist especially two varieties of eosine, the eosine yellow shade (scientifically Tetrabromfluoresceinalium), and eosine blue shade (Tetrajodfluoresceinalium), and besides methylated, chlorated and nitrated products, all of which I have tested. The details of the effect of the same I reserve for another occasion, and I would remark that these bodies are produced at present as important pigments for dying purposes, but that they cannot always be procured in a pure state, and oftentimes are mixed with dextrine, etc. These impurities act disadvantageously upon the silver bath. The *Action Gesellschaft* for aniline colors, Schlesische Thor, Berlin, S. O., has offered to produce for me purified dye stuffs for photographic purposes. Of the two eosines—the yellow shade and blue shade—the latter gives a little more intensity than the former. Combined with an alkali, both show a magnificent fluorescence in dilute solution; they dissolve easily in water, less so in alcohol, and absorb very powerfully the yellow green and blue-green rays. Added to collodion or dry plates in proper proportion they make these sensitive to the rays mentioned, and upon this is based their action of sensitiveness to color.

Besides these bodies their exists a dye not so well known, *cyanosine*, for which I have to thank Dr. Martins, as a very active yellow sensitizer for wet plates. It even

yellow is therefore by a correctly graduated addition of eosine to the collodion increased at least sixty times. If any one wants to demonstrate that this applies only to the colors of the spectrum, and not to ordinary pigment colors, he can be convinced that the sensitiveness to the yellow pigment by the addition of eosine has also largely increased. Take for instance a table of colors through yellow glass upon pure bromide collodion tinted with eosine, and the increased sensitiveness to yellow will be recognized at once. That the addition of color substances may also result in a reduction of the sensitiveness to blue rays is already mentioned in my work, 3rd edition, page 153. Wet eosine bromide of silver plates are about two and one-half times less sensitive to blue than pure bromide of silver plates.

* Translated from *Photographische Wochenblatt* by H. D.

† Regarding the action of these substances, there seems to be complete ignorance in many circles, even among those who ought to know. A late technical journal contained the following:

"The application of eosine had not the effect of an increased sensitiveness to yellow." The mistaken idea of this assertion is best shown in the following facts that the eosine collodion described further on will reproduce the yellow of the solar spectrum after one second's exposure, while the same collodion without eosine will show a weak action to yellow only after one minute's exposure. The sensitiveness to

surpasses eosine by its absorption band tending more towards the red of the spectrum, causing thus not only yellow-green sensitiveness (as with eosine) but also an orange sensitiveness. Unfortunately it is not furnished to the trade in a sufficiently purified state. The *Actien Gesellschaft* for aniline colors manufactures at present only eosine of the yellow shade for photographic purposes, which, according to my directions, has been twice recrystallized. This I can recommend to all who want to experiment with the color collodion. Some time later purified erythrosine will be produced for photographic purposes, which then will be preferred to the eosine. If these dyes are tried upon gelatine or collodion dry plates, it will soon be observed that the former can be doubly more sensitive to the yellow of the spectrum than to the blue. This would be of very little practical advantage, the yellow of the pigments being in comparison to the yellow of the spectrum so dark that, as I have proven before, the yellow sensitiveness has to surpass the blue sensitiveness twenty-five times to reproduce the pigment yellow actually lighter than the blue. Much more favorable results are obtained from the collodion plates. At the first attempt I succeeded in producing such plates as were from eight to ten times more sensitive to yellow than to blue. It may be therefore justifiable that by following this interesting problem (the taking of colored bodies in their correct proportion of tone), I commenced with the collodion process.*

But the action of the coloring matter depends to a great degree upon the composition of the collodion. If to ordinary iodized collodion about five per cent. of a solution of eosine or cyanosine, 1 : 400, are added, very little yellow sensitiveness under an ordinary exposure will be observed. Therefore I experimented with iodized collodion of different proportions of bromide, and the result was, that the yellow sensitiveness in-

creased with the amount of bromide contained in the collodion. This experiment led to the use of a *bromized collodion*, but it showed also that less iodine would act favorably upon its sensitiveness. If by prolonged use the silver bath contains iodide of silver, a sufficient quantity of iodide of silver will combine with the film of the plate so that pure bromide of collodion can be used. For new silver baths containing very little iodide of silver, it is good to add five per cent of pure iodized collodion.

In general it can be accepted that the sensitiveness to white light of the eosine bromide of collodion plates, prepared in an iodide of silver bath, is three times inferior to the sensitiveness of the ordinary portrait collodion.

II. Formule.

1. *Solution of Coloring Matter*.—As long as no other sufficiently pure coloring matter can be found in the trade, eosine of the yellow shade or eosine of the blue shade is recommended as a color body.

Half a gram of the same is dissolved under continual shaking in 160 centimetres of 95 per cent. alcohol, and the clear solution is decanted from the sediment.

2. *Collodion*.—Two grams of bromide of cadmium are dissolved in 30 centimetres of alcohol; it is then filtered and one part of the filtrate is mixed with three parts of neutral celloidine collodion with two per cent. of cotton. For some purposes a denser coating is more advantageous. This is obtained by dissolving two and a half grams of bromide of cadmium in thirty centimetres of alcohol, filtering and mixing (in the above proportion) with two and a half per cent. instead of two per cent. of collodion. Such collodion flows a little thicker and silvers a little slower. To 95 centimetres of the above collodion (2) are added five centimetres of eosine solution (1) shaking the same well. The collodion is best preserved in yellow bottles and in a dark place.*

* My experiments with gelatine plates I will describe later, but I would remark that the Paris isochromatic plates from Clayton and Falfer are just as good, only doubly more sensitive to yellow than to blue.

* Increase of the eosine does not imply an increase of the yellow sensitiveness, but reduces only the total sensitiveness of the plate. Reduction of the eosine reduces the yellow sensitiveness. The above conditions have been determined by a great many experiments with different mixtures.

Silver Bath.—Crystallized silver 50 grams; water, 500 centimetres; iodide potassium solution (1 : 100) 13 centimetres; glacial acetic acid until it reacts acid (six drops are generally sufficient). Nitric acid is not to be recommended for acidifying, acting too strongly upon the coloring matter. Particular attention should be drawn to the fact that eosine will be destroyed by acid and be changed into a yellow coloring matter, which will no longer have the desired action (increase of yellow sensitiveness); therefore a surplus of acid should be avoided.

With regard to the danger to which the silver bath is exposed in consequence of impurities in the coloring matter as found at present in the market, I deem it inadvisable to silver the color collodion plates in the same bath with portrait and other plates.

I use for this purpose the horizontal trays, and not the so called baths.

Developer, Intensifier and Fixing Solution.—Those employed in the ordinary wet process can be used. The plates are treated just like ordinary wet plates, and it is an advantage of the process to manipulate without making any changes. All those who understand the wet process can work at once with the color collodion. Pyro intensifier, bichloride of mercury, uranium and lead strengtheners can be applied just as well as with ordinary collodion.

III. Manner of Operation.

It is best to gelatinize* the plates, the coating with collodion is done in the usual way, but the silvering lasts much longer, the formation of bromide of silver proceeding very slowly. It takes at least five minutes. In stronger silver baths it will take less time.

Before beginning the bath is to be tested

* 1 gram gelatine is dissolved in 300 grams of warm water, filtered, and then after cooling 6 centimetres of filtered, cold-prepared chrome alum solution 1 : 50 is applied. The plates are well acidified, washed, placed in a dish with distilled water, and then flowed twice with the gelatine solution. The first flowing serves to remove the water. It is best to operate in a room which is not too cold.

for acid reaction with litmus paper, adding eventually glacial acetic acid if necessary.

In regard to Lighting of the Dark Room great care is not essential. I recommend orange colored lamp chimneys. Eosine itself makes the collodion only very slightly sensitive to red. If the plate is held in the shade, yellow light may serve just as well for lighting the dark room. When obliged to expose the plate to the free yellow light, I generally hold it so that the edge is turned towards the light; in that way there is no danger.

Exposure.

As already mentioned above, the sensitiveness of the eosine-bromide plates is about one-third of the sensitiveness of ordinary iodized collodion plates. The time of exposure can be judged from this. In taking colored pictures (for instance, the table of colors from my book), the increased yellow sensitiveness will not show itself in such a marked degree as many might expect. Chrome yellow and ultramarine blue will get bright at once. But in taking rose-colored bodies the action of the eosine will manifest itself quite distinctly. These will appear in the proper time.

But for other tones (green) the action of the eosine will come out decidedly. If the action of the blue is to be reduced still more, one must have recourse to yellow plates. The table (in our next) is taken through a yellow glass. A little prudence is necessary in the selection of it.

In that copy will be seen a slight want of sharpness. This is due to the fact that yellow window glass with bubbles only was at my disposal, and no yellow plate glass, as should have been. Quite important is the right shade of the yellow plate glass; very dark ones lengthen the time of exposure materially and very light ones not reducing the blue sufficiently. I recognize the right shade spectroscopically; but those who are not acquainted with the use of the spectroscope may try the shade photographically.

Now it is by no means necessary that every picture should be taken through yellow

low glass, and there are indeed pictures which photograph more favorably without these.

Those who handle colored pictures will soon find out if a picture is to be taken with or without a yellow glass, and if necessary a few trials will suffice. But it should always be remarked that the yellow plate glass will prolong the time of exposure (sometimes three times as long), as even the best yellow plates absorb not only blue but partly yellow light.

In taking copies with color collodion I generally use an aplanatic lens, which even with the largest opening will admit a sufficiently sharp picture. For long exposures a plate-holder is to be recommended which will admit the placing of a yellow glass in front of the plate, thus preventing a drying of the same.

The Second Silver Bath.—The plates could be developed after exposure in the same way as any ordinary wet plate, were the bath not affected by the impurities appearing in almost all the coloring matter, and in consequence of which the so-called organic faults of the bath present themselves after silvering a few plates. These consist partly of fog, partly of an uneven cloudy precipitate, partly in crescent-shaped stripes running from the edge towards the middle. The latter interfere sometimes more than the former; they may be obviated or at least reduced by a lively moving of the plate in the bath. But if the bath is very strongly affected by organic matter, there will be no other alternative to avoid such impurities than the second bath, that may be called the *developing bath*.

The plate, after exposure and *before developing*, is immersed in the following bath: Silver, 50 grams; water, 500 grams; nitric acid (1.22 spec. gravity) 4–8 drops.

In this the plate is kept with a lively motion for two minutes, the impure silver residues are washed off by this means, and the eosine dissolved by the strong nitric acid. Afterwards the development can proceed without danger of one of the above mentioned defects.

In course of time the developing bath

will become impure; then it is taken as a sensitizing bath, after having been neutralized and reacidified with glacial acetic acid. *In this bath also the test before working has to be made with litmus paper for the acid reaction.*

The Development.—The plates, as a rule, are developed with the ordinary developer as used for the wet process; but the *alkaline developer* can be made with the same success and the latter has even the advantage of showing fewer spots of organic matter than the acid one.

For the alkaline development *one* silver bath only is needed. The exposed plate is first washed with distilled water, then held under the faucet for five minutes, then washed again with distilled water, and then developed. A dish is to be preferred for the purpose. The solution is as follows:

Carbonate of ammonia solution 1 : 6, 2 centimetres; bromide of potash solution 1 : 4, $\frac{1}{2}$ centimetre; pyrogallol acid solution 1 : 10 1 centimetre; water, 30 centimetres.

When the exposure is too short the quantity of the carbonate of ammonia may be increased.

(To be concluded in our next.)

FOREIGN NOTES.

Henry Baden Pritchard.—Deeply moved and troubled as I am at the loss of my friend, it is impossible for one who had learned to love Pritchard not to look back with satisfaction on his life and deeds; notwithstanding that he did not live out his full time, he performed far more than the work of a lifetime; and he gained what he most valued, the devoted attachment of those about him. The everyday platitudes about the virtues of the dead are too flat and oftentimes too unmeaning to be applied to such a man as Pritchard, for whatever may have been his merits as a scientist, as a novelist, as the literary exponent of photography—and these merits are thoroughly recognized all the world over—he had qualities of heart and soul far above all these; qualities that made even a child love him and confide in him.

Mr. John Spiller on the Fading of Prints.—At a recent meeting of the Photographic Society of Great Britain Mr. Spiller pointed out that one of the most important causes of fading is the presence of hyposulphite of soda in the mounts, this salt being used as an *antichlore*; that is to say, that it is used in order to render harmless the last traces of the chlorine used in bleaching the pulp. Sulphite of soda is quite as efficient antichlore as the hyposulphite, and unlike the latter salt it is in no way injurious to photographic prints. In order to meet this condition of things Mr. Spiller suggests that pressure should be put upon the paper makers, in order to induce them to make use of the sulphite as an antichlore rather than the hyposulphite.

In connection with the fading of prints it has been noticed that very many kinds of paper become exceedingly yellow on exposure to the light and air, but investigations have proved that the discoloration is mainly due to the use of imperfectly cleansed wood pulp in making the paper, and it is actually the incrusting matter of the wood fibre which undergoes change.

Artists and Photography.—Every now and again an artist is called to account for making an undue use of photography in the composition of his pictures, and your readers will doubtless remember the affair of the *Sirène* which created so much ill feeling recently in Brussels. An affair of a somewhat similar character is now under discussion in Paris, in reference to a picture by the well-known artist M. Dantan, and which picture was to have been purchased for the state collection. M. Havard, the critic of the *Siècle* boldly stated in reference to this picture, which represents the interior of a modelling studio, that not only was it an exact copy of a photograph, but that even the photograph was not made by M. Dantan. After much personal and irrelevant discussion M. Dantan admitted that he had used a photograph in the arrangement or composition of his picture, but he took great pains to prove that he had worked at the canvas for two months in the studios of M. Aviland. The art critic M. Havard,

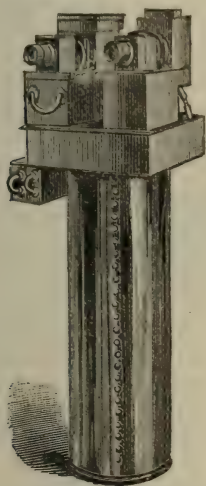
however, justly regards this as a complete acknowledgment of his charge, as he points out the absurdity of supposing that M. Dantan in reproducing the photograph did not work at the canvas; his original contention was that the picture is a copy of a photograph, and this appears to be undoubtedly the fact. That an artist should make abundant use of the work of the camera in making his pictures is undoubtedly right, but to merely copy every point of a camera picture to the canvas, and to merely add color, is hardly the thing; or if an artist does this he should give full credit to the original producer of the photograph.

M. Davanne in commenting upon the affair points out how unreasonable it is that, according to the law of France, a photograph should not be the subject of copyright protection, while a painting copied exactly from the original production should be fully protected by the law, and the photograph copyright commission will doubtless make use of the Dantan incident in pushing forward the just claim of the camera picture for protection.

Another Lime Light Explosion.—Yesterday (the 5th instant) an explosion which might have had very serious consequences took place at the great theatre in Drury Lane during the morning performance. It is supposed that in some way the oxygen found its way into the hydrogen bag; but be this as it may, the explosion was sufficient to so far injure the two men in charge of the apparatus as to make it necessary to take them to a hospital, and had it not been for the presence of mind of some of those on the stage a serious and probably fatal panic would undoubtedly have followed. A little timely gag, however, served to make the audience think the explosion a part of the performance. "Did you hear my trunk fall, and do you see the cloud of dust?" asked one; the reply being, "No, it is too heavy for your trunk; it must be your mother-in-law's!"

In connection with the lime light I may call your attention to a description of Mr. Fred E. Ives', of Philadelphia, new compact ether-oxygen apparatus which he con-

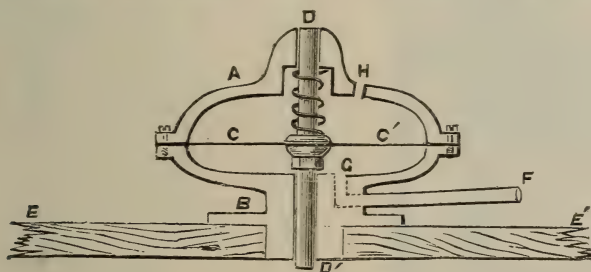
tributes to the *Photographic News*, although it certainly seems strange to send from this country an account of an apparatus elaborated in the States; still if it has not been



described in America a short account will be welcome. Mr. Ives says: "The apparatus is remarkably compact but complete and powerful. The steel oxy-cylinder is 40

inches high, and holds 80 feet of gas at a pressure of 220 lbs. to the square inch. It serves me also as a stand for my lanterns, which are my own make, and can be folded up in thirty seconds, so that each forms its own "carrying case," and measures only $5\frac{1}{2} \times 6 \times 8\frac{1}{2}$ inches. The condensers are $4\frac{1}{2}$ inches diameter, and the objectives about 4 inches back focus, with rack and pinion. The table top attachment to the cylinder, together with both lanterns, the ether saturator, two boxes of slides (100), and an extra pair of objectives, all pack into a small trunk.

A Pneumatic Liberator by Mr. Pancoast.
—When the indefatigable Secretary of the Philadelphia Association was in London on the way back from his recent tour in the East he showed me an admirable arrangement for liberating a drop or spring shutter by pneumatic agency, and he was good enough at my suggestion to communicate a description to the *Photographic News*. I can in this case offer your readers a description of an American novelty without fear that they are already familiar with it. The pneumatic release consists of two

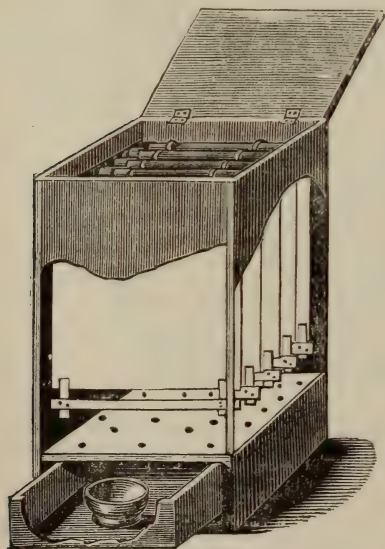


nearly hemispherical casings of brass, A and B. in the subjoined diagram, these being bolted together by set screws as shown; but between these is clamped a disc of soft rubber, CC'. A spindle, DD', which passes axially through the whole system, and works tolerably freely in its bearings, grips this disc in its centre by means of a pair of adjustable nuts, like the setting of a circular saw; but the light spiral spring shown in the upper part of the diagram tends to hold the spindle down in the position indicated in the drawing.

To the projecting tube, F, is attached one end of a rubber tube, to the other extremity of which is fitted an ordinary elastic ball or small enema bottle. When this elastic ball is compressed, the air entering the lower compartment by the part G lifts the diaphragm and central spindle, and as EE' is supposed to be the main board of the shutter frame, the withdrawal of the terminal, D, serves to release the drop or moving part of the shutter. The hole, H, serves to allow of the free escape of air from the upper compartment, or the escape may be pro-

vided for by channelling the upper bearing at D. As regards the lower bearing at D', it might be at first sight supposed that very high class and expensive work would be required to ensure a sufficiently accurate fit; but this is not the case, as, if ordinary straight drawn wire be taken for the spindle, it will be sufficient to merely drill out the bearing-hole with a twist-drill.

The Fuming of Albumenized Paper.—The American system of fuming paper with ammonia is gaining ground in Europe, and although some six or seven years ago it was rare to find any photographer who adopted the plan, we now find that many fume, especially in the case of the ready sensitized or *preserved* paper. It is difficult for me to judge how far the following remarks of Dr. Liesegang are to the point with your readers, and how far his simple directions for converting a box or packing case into a fuming chamber may be novel to them, but his



observations seem to me to be so clear and to the point as to be worth reproduction on your side of the Atlantic.

This operation is not exactly essential—indeed, it is generally dispensed with—but by adopting it the following advantages are realised. The printing is more rapid and

more brilliant, while the pictures tone more readily. He who will profit by the advantages must not mind the small labor involved in toning, and should take a wooden box of the required size, and must provide it with a properly hinged and well fitting cover. About six inches from the bottom is to be fitted a perforated board, as shown in the drawing, on y it is well to make more holes in it than are indicated by the sketch, excepting in the central portion. Under this false bottom a drawer is placed, a portion of the front of the box being cut away for the purpose, and in this is placed a saucer containing strong ammonia. The paper must be quite dry, but as in this condition it tends to roll up, it is as well to attach a wood slat to the lower edge of each sheet, by means of two American clips. In the upper portion of the box a number of cross-bars, upon which the sheets can be clipped or pinned, are provided. These may be about three inches apart.

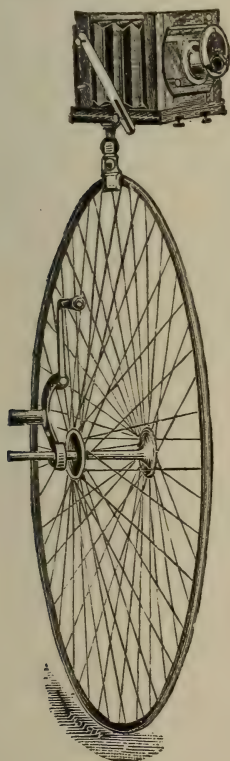
The sheets may remain between ten and fifteen minutes in the fuming box; but a longer time is required if it has been sensitized upon an acid bath than upon a neutral one, and in winter a longer time is required than in summer. It is also well to fume longer in bright weather than in dull, and also when weak negatives are to be printed; and as the ammonia tends to make the paper a little damp, it is necessary in wet weather to re-dry the paper before placing it in the copying frame; but in dry weather the slight amount of moisture taken up from the ammonia is advantageous.

It should be noted that it is advisable to print a little deeper on fumed paper than on unfumed; and as the fumed paper becomes yellow very soon, it should be used as soon as practicable. At the same time it is often desirable to allow the paper to remain exposed to the air for ten or fifteen minutes, in order that the excess of ammonia may evaporate, as otherwise the varnish might be softened.

Bichromate of Soda vs. Bichromate of Potash.—Messrs. Potter & Higgin of Bolton have introduced the bichromate of soda into commerce as an economical and

convenient substitute for the potash salt. The soda salt is rather more active as a sensitizer for gelatine as it contains a larger proportion of the chromium element, and as it is much more easily soluble in water it may often be far more convenient in use. Moreover the soda salt is put on the market at a lower price than that charged for the potash salt.

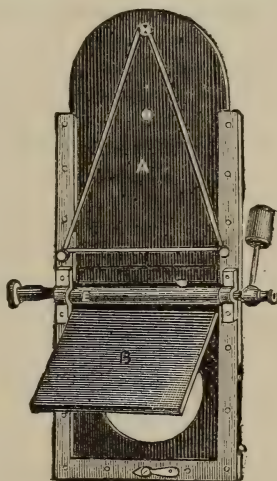
The Tricycle for the Outdoor Photographer.—The tricycle is taking a really im-



portant position as a means of getting about on the roads, whether the rider has luggage or not; and there seems to be every chance of cycling becoming of increasing importance. Many photographers take out their dry plate kits to the weight say of 40 or 50 pounds and think but little of a run of twenty miles out and twenty back on a fair road. The tripod stand, however, is the most cumbersome and inconvenient article which has to be taken, and Mr. Lancaster

has designed a clip represented by the subjoined cut. Of course, it would be quite impracticable to fix a large camera to the wheel as represented, but the method is perfectly satisfactory for any box up to half plate. The clip is also useful for fixing the camera to a fence, chair back, or to the window ledge of a railway carriage. Indeed the clip may be used in many cases when a stand could not be employed.

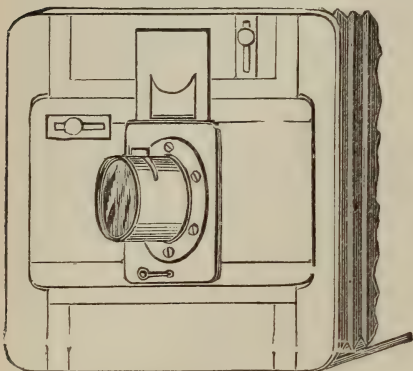
Two Shutters. As a matter of fact one hears far too much of new shutters and modifications of old ones, but at the same time the photographer who does not wish to be left behind must know what is being done. First then allow me to call your readers' attention to a simple modification of the Reynolds & Branson shutter (described on page 403 of your last volume), which I find in the *Photographic News*. A



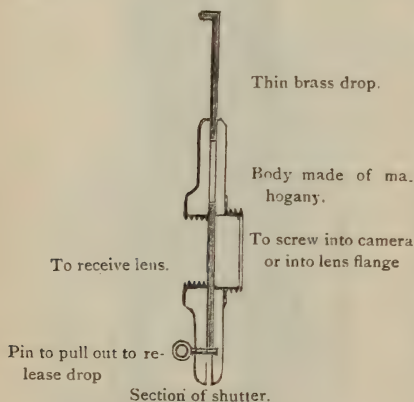
balanceweight- attached to an adjustable arm on the right hand side serves to lift the flap with an easy sweep, while the india rubber band which is shown as pulling downwards on the drop A, may be removed if a moderate exposure will suffice. The small catch shown at the bottom of the figure serves to liberate the flap, and this catch can easily be worked by means of a thread passing through the hole shown in the longer branch.

From the same source I take a descrip-

tion of a neat adaptation of the drop shutter to the front of the camera by Mr. W. C. Williams. It is sufficient to ask you to reproduce the diagrams and the reference to the parts.



Complete shutter as adapted to the camera.



Iodide of Nitrogen as a Photometric Agent.—M. Guyard has made the observation that iodide of nitrogen is remarkably sensitive to the action of light. If it is suspended in water no decomposition takes place as long as the vessel is kept in darkness, but in a dull diffused light minute bubbles of nitrogen are immediately liberated, and if bright sunshine is allowed to act on the iodide an effervescence almost as brisk as that resulting from the action of dilute sulphuric acid on chalk is set up. Iodide of nitrogen may be readily produced by

mixing a saturated solution of iodine with twice its volume of ammonia solution, when the iodide is deposited as a blackish precipitate. When dry it is one of the most sensitive explosives known, a touch with a feather serving to cause it to detonate. M. Guyard's observation possesses great interest from a scientific point of view, as a study of the action of light on the iodide of nitrogen is not unlikely to lead to important advances in the elucidation of the theory of actinism.

A Matt Surface for Prints on Albumenized Paper.—I am not sure whether in my last I referred to the simple and effective means which Herr Wilde adopts in order to obtain a matt surface on albumen prints. He merely used a special ammonia nitrate of silver bath, which so far disintegrates the albumen as to make it yield prints with a very pleasing matt surface. All other operations are conducted as in the case of ordinary printing.

To prepare the ammonia nitrate sensitizing bath, one part of nitrate of silver is dissolved in eight or ten parts of water, and sufficient liquid ammonia is added to redissolve the precipitate which is thrown down at first. A solution of citric acid, containing one part of the acid in ten parts of water, is then added to the ammoniacal solution until a faint turbidity, which does not disappear on agitation, is produced. A volume of ether equal to one-tenth of the bulk of the silver solution is next added, and the sensitizing bath is ready for use.

In reference to the subject a correspondent of the *News* suggests that an excellent plan is to roughen an ordinary print by rubbing fine pumice powder on the albumenized surface by means of a soft india rubber pad. In many cases matt surface pictures possess a peculiar attractiveness, indeed much depends on the character of the subject and the size of the print.

Vogel's Method for Photographing Colored Objects or Pictures.—Some further details regarding this matter have been published and good accounts of the process are given by those who have tried it. Dr. Vogel says:

1. From two to three per cent. of alcohol should be added to the silver bath, No. 1.

2. When the yellow glass is not used, it suffices to give double the exposure which would be required if an ordinary iodized collodion were employed.

3. When the yellow glass is used, the exposure may be estimated at about five times what would be required in the case of ordinary work on iodized collodion.

4. As eosine is alkaline, and not only neutralizes the silver bath, but may occasion further mischief by its decomposition, both baths should be tested before use, as follows: A drop of a solution of potassium permanganate containing one part of the salt to fifty of water is added to the nitrate solution, and if the rose color disappears immediately, a second drop is added, and so on until the tint remains for the period of one minute. After this the solution is tested with litmus paper, and is, if necessary, made slightly acid; acetic acid being used for bath No. 1, and nitric acid for bath No. 2.

Baths which, in the hands of my pupils, gave comets and stains, were quickly restored to a good working condition by being treated with permanganate of potassium, as above described.

When, however, organic compounds have accumulated in the bath, it is not sufficient to treat it in the cold with permanganate of potassium, and it is necessary to treat the solution to the boiling point in a porcelain dish, and treat it gradually with permanganate solution, as already described. When the rose color remains for half a minute, the solution is filtered and treated as before. Permanganic acid is to be preferred to the potassium salt, but its use naturally requires spirit, skill, and care.

It is a very remarkable fact that the grain of the paper shows very much less when a negative is produced by the new method, than when made by the usual process on iodized collodion, and this circumstance has been so often proved by my own experiments, and by those of my pupils, as to be beyond doubt. It may be that the shadows of the grain are mainly lighted by the yellowish reflections from the studio, and

the yellowish light counts far more in the new process than in the old.

The Quick Removal of Hyposulphate from Negatives.—At a recent meeting of the Imperial Russian Technical Society, M. Felisch recommended a bath made up by dissolving equal parts of iodine and iodide of potassium in water until a liquid of the color of port wine is obtained. The partly washed plate is allowed to remain in this for a few minutes, after which a rinse with water is sufficient. Many valuable negatives are ruined through the imperfect removal of the fixing salt.

Improvements in Pavloffski's Method.—

The Pavloffski method for producing transfers on wood blocks and vitrified pictures in enamel, which I described in a previous letter (p. 225), is being experimented with in several quarters, and Lieutenant Pavloffski now adopts the simple method of spreading the mixture of gum and color on paper just as in the case of the ordinary carbon tissue. This tissue can be sensitized in a bichromate bath containing enough alcohol to prevent the dissolving of the gum, and the remaining operations are quite similar to those incidental to ordinary carbon printing, only alcohol must be used when required to prevent the dissolving of the gum.

Chloride of Calcium for Drying Plates.—

All the ordinary drying cupboards take much time to fit up and get into a satisfactory working order, as few photographers know how easy it is to quickly arrange a thoroughly efficient drying apparatus by using chloride of calcium as an absorbent. A simple box is all that is required, and all the complex and often unsatisfactory expedients for creating an air current are rendered unnecessary. Chloride of calcium is obtained as a bye-product in the course of several manufacturing operations, and if required on a large scale it can be had almost at a nominal price. Still it does not waste in use, as when it has absorbed water it is merely necessary to dry it at a moderately high temperature in order to restore its useful qualities. Mr. T. S. Hamilton, writing in the *News*, gives his experience in the following words:

The dried air current being my bugbear I determined to do without it. To that effect I stopped up the inlet and outlet of my drying-box, making it as air-tight as possible, and distributed in six deep saucers four pounds of calcium chloride, placing one on each alternate end of the shelves, after which the plates were put in and the box closed. The plates were dry in some time less than forty-eight hours; and two more batches of fifteen whole-plates each were dried without touching the calcium, nor was it taken from the box until required for duty again, when it was turned out of the saucers into a frying-pan—to evaporate slowly over the hot plate of the kitchen-range, and replaced in the unwashed saucers when on the point of crystallizing.

This method of drying is simple—for any box that is air-tight can be used, and it is a certainty—for the plates are uniform and clean to the edges. For the past six months I have dried in this manner without a failure, and I will never again ruffle my temper in the attempt to dry air that will act the carrier for every abomination that our too industrious "Biddy" insists on driving under the door and through the key hole of my dark room with that spasmodic broom of hers.

Storing Oxygen in Zinc Gas-holders.—Photographers sometimes do this when they require an occasional lime light for enlarging; in fact, I have done it myself. It has, however, been shown that the proceeding is not always safe, as hydrogen is slowly liberated by the action of the water upon zinc, especially if the zinc is of an impure quality or if the water is charged with carbonic acid; but it has recently been shown that if lime water is used instead of ordinary water there is no fear of the formation of an explosive mixture, at least as long as any free lime remains in solution.

Interesting Observation on the Effect of Heat on Sensitiveness.—Captain Abney has recently communicated to the *Bulletin Belge*, in which he draws an analogy between a sensitive gelatino-bromide plate and a tablet covered with the peculiar form of sensitive sulphide of calcium known as

Balmain's luminous paint. If a gelatino-bromide film is warmed it becomes more sensitive, and if cooled its sensitiveness to light is reduced. So that if a piece of warm iron is pressed into contact with the back of a plate during exposure the outline is indicated by a region of greater sensitiveness, while the reverse holds good when a fragment of ice is similarly used. Captain Abney promises to further investigate the matter.

The Photographer and Chemical Progress.

THE nineteenth century will probably be known in the history of the world as the age of mechanical progress and development. No previous one has in any way approached it in mechanical advancement; and looking upon the progress which has been made in the last one hundred years we find it very difficult to conceive that anything like the same ratio of achievement can be kept up for another hundred years. In very many lines we are close to theoretical perfection; for example, the efficiency of the steam engine in the best examples has reached 75 per cent. of all that is possible; so that the improvements which remain to be made, in a certain sense, must be less than those which have already been accomplished.

The coming century, if the signs of the times be interpreted rightly, will be the age of chemistry. To-day the world stands but on the threshold of this great science. The student has to push his investigations but little way in almost any direction before finding himself on the very outskirts of human knowledge. New regions utterly unexplored lie in every direction, and even tyros in chemical knowledge stumble across inventions and combinations which are both new and valuable. Under these circumstances we look upon the widespread interest which is being taken in photography as in the highest degree promising for the future of the art. Aside from the advantage which is likely to accrue to photography there will be an immense advantage also on account of the wider spread of chemical knowledge. The most careless amateur in

the art, who pays as little attention as possible to chemistry, has some idea of the action of one substance upon another and of the laws of chemical combination. We urge, therefore, every amateur as well as professional photographer to increase his chemical knowledge at every opportunity. Not only will he be a better photographer for this study, but the knowledge gained in photography will give him an advantage in chemical study which can hardly be estimated. The ability to weigh and measure, to handle solutions, to prepare mixtures according to formulæ, and to understand directions, requires no small amount of drill; and the beginner in the study of chemistry usually finds this so tedious and exacting that he gives up his chemical knowledge long before he has had an opportunity to put it into actual practice. The young photographer has learned all these things as a part of his photographic work, and is well provided with a knowledge of the elementary principles, and can undertake the study of chemistry without the necessity of passing through the disagreeable elementary drill in manipulation; he has, in fact, every incitement to chemical study. Profit and honor both call for work in this direction, and those who have the leisure or inclination cannot do better than to extend their chemical researches into such branches as may present themselves for investigation.

A CIRCULAR comes to us from the enterprising firm of Douglass, Thompson & Co., giving all the facts regarding the Convention, the list of hotels, rates, etc. They have also secured a special train and special rates (\$10 00 only), for the round trip from Chicago to Cincinnati, a copy of which will be found useful.

Gentlemen:

If you go to the Photographer's Convention at Cincinnati, which no doubt you will, please look at the celebrated Swiss Suter lenses, (exhibited by the Allen Bros. of Detroit), that are said to be the most remarkable lenses of the century. See adv.

Poetic Effusion of an Instantaneous Photographer.

The unusual spell of bad weather during the first three months of this year caused great delay in the finishing of photographs, and induced the following poetical correspondence:

NEW YORK, MARCH 29th, 1884

Mr. C. D. FREDRICKS.

Dear Sir:

Into your Gallery I chanced to stray,
A little more than a month to-day;
I passed behind that little screen,
Where perhaps I shall never again be seen.
You glanced through a tube with a knowing squint
And down on a glass my picture "wint;"
My number is 42, 6, 48,
Please tell me how much longer I've got to wait?

D. H.—KISS.

ANSWER.

Yours of 29th was duly received,
Over contents of which I am very much grieved;
Since you posed, the Lord has sent much rain,
Which gives you and me (especially me) much pain.
For every one wants his or her picture done,
Which can't be "did" without the sun:
The proceeds of taking being quite "*instantaneous*,"
Some thousands are waiting, with names miscellaneous—
Your photos. will be sent with this, [ous.
And I hope will please Mrs. H ——— kiss;
Or if they are for some pretty cousin—
Recollect, duplicates are \$3 00 per dozen.

C. D. FREDRICKS.

NEW YORK, April 7, 1884.

C. D. FREDRICKS, ESQ.,

Dear Sir:

The Photos. were finished in excellent style,
Which compensates me for waiting the while;
But my feeble attempt at poetical rhyme,
Was quite overwhelmed by your answer sublime.
May He who sendeth the rain and snow,
Be your guide and your shield wherever you go;
And when Photos. and Time shall be forever no [more.
Bring you forth in *His Likeness* on that beautiful [shore.

D. H.—KISS.

We are now being favored with sunshiny days,
Any say "*au revoir*" to vexatious delays.

Hot Weather.

WE understand that the gelatino bromide Dry Plates that stand the hot weather best are made on the Swiss hard gelatine of Carl Simeons.

Western Notes.

TO THE EDITOR.

AN amateur's photographic trip through the western part of the country may be of interest to some of your professional as well as your amateur readers. During my travels I have endeavored to keep my eyes open for picturesque scenery, and for localities where the amateur tourist would be likely to find a pleasant or profitable field for his camera, because usually there is much time lost in exploration which could be otherwise well employed; and many a man who has three or four days to spare in the country, and would gladly take his camera with him, finds it necessary to waste two or three in deciding where to go and what views are to be taken. The first place on my journey where I stopped long enough to see anything of the picturesque was at Susquehanna, New York. This little town is full of odd bits, which combine village architecture, foliage, and mountain views. The town itself is so hilly that there is nowhere within the city limits a sufficiently large and level space upon which a base ball ground can be laid out. The streets run at all possible angles, both vertically and horizontally, and it is not an unheard of thing to find a carriage way ending in a flight of steps. Following the labyrinth of streets upon which the Catholic Church stands the artist finds half a dozen views of little cottages under trees, with glimpses of the distant valley that would make lovely photographs. A mile or two from the town is the beautiful Starucca Viaduct, and beyond, the reservoir, many miles long, winding among the hills more like a river than a lake. It would be easy for the tourist to keep his camera busy for a week, and he would feel amply rewarded.

Quiet, pretty and lovely streeted, Elmira is also worthy of a visit; it should be photographed, however, from the Railroad Bridge or the water-side. Its houses with their balconies overhanging the river are as quaint and curious as one could well imagine, and the temptation to leave the train, interrupt the journey, and spend the day upon the bank of the river was a very great one.

Buffalo is beautiful and full of interest, but it is largely of an architectural character, and the amateur in search of the picturesque would hardly be justified in spending much time in the city; the old fort, and the river banks, however, deserve to be preserved by photographers, and a dozen views might be taken in and about it, which would not only be interesting from a historical but also an artistic point of view. Along the canal or river, or harbor (I hardly know what the proper technical term should be for it), there is enough to occupy one for several days, and furnish subjects for dozens of pictures; indeed, wherever shipping can be found, the artistic eye can always make pictures.

Beyond Buffalo, I made no stop until I reached the little town of Painesville in Ohio. Seen from the railroad station, a more unpromising field could hardly be imagined; the country appears to be perfectly level and devoid of picturesque interest, as prairie usually is; but as the boys say, "appearances is deceitful;" and in this instance, the appearance gave no indication of the beautiful valleys to be found around the town, which really is located on a table land. Along the Grand River there are some of the most charming views a photographer ever saw upon ground glass. The river is spanned in several places by quaint old wooden bridges, while its lofty banks, rising in places to perhaps a hundred feet, and everywhere fringed by trees or vines, makes it almost impossible to get a picture which is not above the average in its picturesque elements. Directly back of the town there are branches of the Grand River, running in valleys with precipitous banks, which are full of lovely bits of scenery. A narrow gauge railroad running down to distant coal mines crosses some of these valleys on light and graceful stone bridges; both from above and below, these bridges form admirable subjects, either for the amateur or professional. The new Waterworks are to be located on one of these little streams in a most beautiful position, and will undoubtedly, when finished, be so situated as to enable the artist to reach several spots now somewhat inaccessible.

My next stopping place was Cleveland, O. Here one could very well occupy himself with street and harbor photography, if he chose. The combinations of subjects are in many cases peculiar. As usual, when at home, "the prophet is without honor," and only some of the finest views have been made the subjects of photographs by the local artist. Whoever visits Cleveland should endeavor by all means to spend half a day in Ryder's famous gallery, and if as in my case they have the good fortune to become acquainted with either Mr. Ryder Sr. or Jr., they will have a pleasure the travelling amateur rarely meets. Most photographers know that this establishment is an art house literally. I will endeavor at some other time to send you a note on the gallery, dark rooms, etc.; here I can only mention that Mr. Ryder, with the old enthusiasm still burning brightly, has since become an amateur photographer, and, taking up his portable camera and box of dry plates, starts out upon his vacations with an eye to the beautiful. Last summer he spent the season in New York, and has now as a result of his labors a large number of landscapes on 10 by 16 plates from the Cascadilla Creek. As specimens of landscape photography they appear to me to be really unsurpassed. One of them represents a bank of old hemlocks overhanging the river, and is full of artistic feeling, while chemically and optically it is all the most exacting professional could desire. The work was exceedingly difficult because of the overhanging trees, which made long exposure absolutely necessary even with the most rapid plates which were procurable. Even under these disadvantages Mr. Ryder has introduced into several of the pictures groups of children wading across the stream or playing in the water, and these although it was necessary to give them quite protracted exposures are as natural in pose as could be desired, and they add very materially to the interest of the photographs. One or two of the landscapes, including one view across a little pond, have been vignettised at the edges; the result obtained in this way, and by forcing the printing in certain portions is

highly satisfactory, and is worthy of the attention of amateurs, who are very fond of printing the negative for all it is worth out to the very corners. Many a negative has a beautiful centre, which is not at all improved by a mass of uninteresting rubbish toward the edges of the plate.

From Cleveland I went to Dayton, and from Dayton to Cincinnati. Although I found Dayton full of interest in my own line, I doubt whether anyone who had not some special local interest would find the town a particularly promising field. Along the canal and among the storehouses some striking bits may be obtained, and there are also a few good views to be had along the river; the river views, however, are mostly too broad and distant to be worth taking on a 5 x 8 plate. They might be managed on a 10 x 16, putting two on each plate horizontally.

Cincinnati is a town which is full of good things; visit after visit might be made to the place, and the artist find constant employment for his instrument; and here he will not be at a loss for subjects, no matter what size of plate is employed. The boy with a $3\frac{1}{2} \times 4\frac{1}{2}$ camera will find himself busy with beautiful scenes, views into strange alleys and courtways, glimpses of the river through the trees, distant steamers, bridges foreshortened, and a thousand and one delightful subjects, which I cannot enumerate, while he who carries an 18 x 24 would be equally well pleased with the compositions which nature offers him. Everywhere there are pictures, and they are so varied in their character that one can scarcely go amiss in setting up the instrument and making an exposure. We should expect the veriest tyro to come back from a trip around Cincinnati with some really beautiful photographs. Every season of the year, too, has apparently its own peculiarities. We doubt whether amateurs can get through Cincinnati without making a visit to Mr. Landy's Gallery, and should they make the visit, they must be prepared to carry away a large number of photographs as souvenirs. The great floods of 1883-4 afforded themes for photographs of a unique character, and

Mr. Landy has improved the opportunity and secured, I should judge, several hundred negatives. Among so many it is impossible for me to mention any in particular; but his facilities were of the best, and apparently no amount of trouble or expense has been spared in securing the very best points of view, and the best possible lighting. In these pictures the artist is quite as apparent as the photographer; indeed, more so, and many of them if they could be printed in black and white would have the artistic effect of engravings rather than photographs, so carefully has the point of view been chosen, and the selection made of subjects. Mr. Landy has a collection of heads, ideal scenes, and general photographic work which both amateur and professional can study with the greatest pleasure. One of the most beautiful things in the gallery at the time I made my visit was a life-size head of Mary Anderson crowned with laurel. Of course the subject was good, and lighting comparatively easy, but the whole effect was as fine as anything I remember having seen for a long time. From a photographic point of view, however, it was not by any means equal to the portrait of one of the distinguished clergymen of the city, which Mr. Landy showed me. This was a model of delicacy and fine modelling, and the subject was one which would be considered impracticable by most men. Cincinnati boasts of a number of picnics, or festivals, as they might be more properly called. In the catalogue they include not only the Musical, but the Riot and the Flood. The "Musical" and the "Flood Festival" have been worked for all they are worth by Mr. Landy, and when he showed me his album of photographs taken in the Court House, I came to the conclusion that he had made the most of that festival also. One cannot look over the scenes in the ruined Court House without being struck with their remarkable photographic excellence, with the fine effects of light and shadow which have been obtained, and with the remarkable lessons which the fire, and the conditions of the ruins must carry to all architects and builders. Some of the interior

views showing the ruined inside, and giving glimpses through open windows into the sunlit streets beyond, are as fine compositions of photographic and chemical work as can be found anywhere. The lenses employed, if I remember rightly, were Dallmeyer. In some of the rooms figures were introduced, and it is worthy of remark that Mr. Landy has succeeded in a remarkable degree in taking the stiffness out of all the groups; they seem to be rather a part of the building, the time and the place than a part of the photograph; they appear less like lay figures and more like real, living and moving men than any I have hitherto seen.

My letter is growing too long, and what I saw in Chicago and on the remainder of my trip must be left for some other time and opportunity. PERDIX.

Useful Hints.

MR. H. A. CHILDS, of New Richmond, Wis., credits the BULLETIN with having seen some useful hints in it in regard to management, and adds: I have not sufficient business to warrant my making engagements, but convey the following information on the back of my receipts.

"All pictures must be paid for at time of sitting, and an extra charge will be made for re-sittings, when there is any change in the style of costume or arrangement of the hair.

"HINTS.—Gents should never oil or wet the hair, and ladies should always have the hair loose, dry and full, and arranged to suit the style of face.

"All colors resembling blue, purple, lavender, plum, magenta and pink, photograph very light. Claret, garnet, green, light Bismarck and stone color, all take a shade darker, and are excellent colors to photograph. Silks and satins take lighter than woollen goods without luster.

ANOTHER judgment has been rendered in the celebrated suit of Theodore Lilienthal vs. W. W. Washburn, in favor of the plaintiff.

Technical Photography.

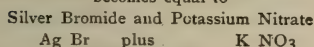
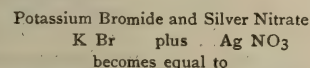
LECTURE BY PROFESSOR CHARLES FORBES.

At the meeting of the Rochester Photographic Association held May 19, Dr. Charles Forbes delivered a very interesting and instructive lecture. Among the visitors present was J. H. Kent, President of the P. A. of A.

The topic of the lecture was the theoretical consideration of the action of the alkaline development of the gelatine dry plates.

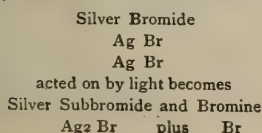
The subject proper was prefaced by a brief review of the atomic theory of matter, as it is now received by scientists. This prepared the Association to more readily understand the various technical terms used in the discussion.

The manner in which the silver salts are formed in the gelatine emulsion was next explained. The principal salt, silver bromide, is in all emulsions. Silver bromide, small quantities of silver iodide and silver chloride are often used in combination. Inasmuch as the silver bromide is the foundation salt in the emulsion, the lecturer gave his attention principally to this in his consideration of the action of the developer. The silver bromide in the emulsion is formed as follows: an aqueous solution of silver nitrate is added to one of some bromide salt, such as potassium bromide. A double decomposition occurs, which may be indicated as follows:



The silver bromide is held in suspension in the gelatine. The soluble salts are thoroughly washed away.

Now when the molecules of silver bromide (Ag Br) are acted upon by light they undergo a change, and molecules are formed having the composition represented by Ag_2Br , called silver subbromide. Thus:



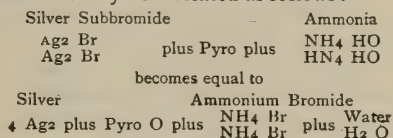
From the molecules of silver subbromide the metallic silver may be quickly precipitated by the developing solution, whereas from the silver bromide it is very slowly reduced. It will be understood, then, that when the plate is exposed in the camera the developable image is formed by the light changing the molecules of silver bromide to those of silver subbromide.

The office of the developer is then to precipitate the silver from the silver subbromide and form the visible image on the plate.

The credit of the discovery of the alkaline development is due to Mr. Borda, of Philadelphia, and Mr. H. T. Anthony, of New York. Mr. Glover, Mr. Leabig and Major Russell, of England, gradually brought it up to its present condition. To the latter we are indebted for the use of the potassium bromide.

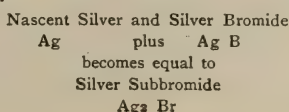
The alkaline developer consists of three things: a strong absorbent of oxygen like pyrogalllic acid, an alkali, and a soluble bromide like potassium bromide. The first two are the only ones necessary to reduce the silver from the silver subbromide.

The chemical reaction of the pyrogalllic acid and alkali (ammonia) on the silver subbromide may be indicated as follows:



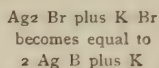
That is, the pyro having a strong affinity for oxygen takes it from the ammonium, converting it into ammonium and water. The ammonium thus liberated combines with the bromine of the silver subbromide, forming ammonium bromide, and the metallic silver is deposited to form the visible image on the plate.

The newly deposited (nascent) silver has this peculiar property: It will combine with adjacent molecules of silver bromide. Thus:



From these new molecules the silver is deposited in turn, and thus the process goes on until a much larger quantity of silver is reduced than could be possibly formed from the original silver subbromide.

Just what is the chemical reaction of the potassium in controlling development is not positively known. It has been suggested that the bromine combines with the silver subbromide and converts it into silver bromide. Thus:



So that when a small quantity of the bromide is added the effect of the light is partially undone. The effects produced by using first an increased amount of ammonia and then an increased quantity of pyro were also explained.

Dr. Forbes' remarks were listened to with marked interest by the members of the Association, and at the conclusion of the lecture, on motion of Mr. Wardlaw, he received their thanks.

Economy is Wealth.

MR. J. H. SIMPKINS, of Salem, N. J., sends us some hints for publication that may prove acceptable to those who delight in experiment and economy. He says:

My way of putting in skylights proves by years of use to be the best and cheapest, and can be kept absolutely tight and free from sweating.

The glasses are laid without any laps in white lead and putty, mixed to a workable consistency, and fitted as closely and evenly as possible; then the joints between each glass are filled up top and bottom (upper and under surfaces), with the same putty and lead. The cracks may require filling once in a year or two, as high winds will shake glass loose; but it will not leak, even if it is not absolutely tight, for the water will follow down under the surface. The sash should be long enough to extend over the bottom support, so that there is an open space the width of each light. These let the drippings, if there are any, drop outside

of the room. If the lower end of the sash is in the room, then a little gutter of tin hung to the lower rail will carry off any water that may collect; but there will be none of any consequence, for the draft of air caused by the opening prevents sweating.

Persons using pyro. for developing dry plates can make a good ink out of the spent developer by adding the ordinary iron developer. My way is to pour the wasted or used pyro. developer into a bottle until I get a quart or so; then add about two ounces of the wet plate developer (the acetic acid will neutralize the alkaline in the pyro.); then add one ounce of gum arabic to the quart, shake up and let stand—the longer the better, as it gets black by age. If too brown in color there is too much iron; more pyro. will make it right. It flows nicely and will not corrode a steel pen.

Mr. Grenier again to the Front.

MR. H. N. GRENIER, who created such a furor with his photographs on wood, has now turned his attention to the production of burnt-in enamels, and has shown some excellent results. He has also made a new departure in the way of printing on ivory, and is now using it commercially for leading photographers in this city.

SAUNDERS BROS., of Akron, O., have startled the people there by taking photographs with electric light. The gallery will be open day and evening hereafter.

MESSRS. NICHOLS & HANDY, landscape and view photographers at 291 Sixth Avenue this city have kindly sent us a photograph made on an 18 x 22 Eastman plate of the members of the Produce Exchange in their new hall, which is more than 300 feet deep.

There were over 2000 persons in the group. This picture was made in 30 seconds with a wide angle lens, diaphragmed.

Report of the Photographic Section of the Amer. Institute.

NEW YORK, June 3, 1884.

PRESIDENT NEWTON in the chair.

MR. MASON. I have received a copy of ANTHONY'S BULLETIN for May, and also a blank from the Northampton Union International Photographic Exhibition to be held at Northampton, England, from December 15, 1884, until January 10, 1885.

PRES. NEWTON. The report of Committees.

MR. GARDNER, the Chairman of the Executive Committee, presented an interesting record of the work of that Committee for the season, and closed with the following:

The Executive Committee, in thus glancing over the work of the past winter, have good cause for congratulating themselves on being sustained by the foremost men, not only in photography, but by those who have the control of the leading photographic monthlies in the country. And it is to all these gentlemen that the Committee desires to return its most hearty thanks for their support in arousing the interest manifested by the large audiences at each meeting of the Section. Hoping that these gentlemen, who have so greatly contributed to the success of the past season, will continue their support in the seasons to follow, the Committee subscribe themselves their most humble and obedient servants.

Report of committee adopted.

MR. GARDNER. We have the promise at the opening meeting in September of *Photographic Reminiscences*, by Mr. Thomas Faris, one of the oldest photographers in the country.

Our subject to-night is—

On the Action of Light on Photographic Silver Compounds.

BY P. C. DUCHOCHOIS.

Since the discovery of the art of photography there is no phenomenon which has more attracted the attention of philosophers and experimentalists than that of the action of light on the silver compounds employed to obtain the photographic image; and, as

should be expected from the nature of the subject, different theories have been set forth to explain it. When the image is formed by the action of light alone, as in the printing process, two theories are advanced: one, that the silver chloride is reduced to subchloride, the other that the reduction is complete and the image formed of metallic silver.

As to the former theory, it should be remarked that there is no conclusive chemical experiment to prove that the chloride has been reduced to a subchloride, for such a compound has never been isolated; its formula, Ag^2Cl , being hypothetical, and not determined by analysis. Nor is the color characteristic: A brown chloride is obtained by treating the silver suboxide with chlorhydric acid, the suboxide itself being considered by eminent chemists as a mixture of the protoxide and metallic silver. It should be remarked also that the color of the insolated silver chloride is different from that of the substance obtained by electricity or the immersion of a silver plate in a solution of copper chloride, Cu Cl , and what is remarkable, that a chloride insensitive to light has been obtained by Dr. Percy in exposing silver leaves to a current of chlorine. If the reduction of a silver chloride to a subchloride were admitted, one should also admit by analogy that all the silver salts acted on by light are first transformed into subcompounds, and that there is consequently a subsulphate, a subfluoride, a sublactate of silver, etc., and, as says Mr. Davanne, that there is an infinite variety of subchlorides at various degrees basicity according to the amount of haloid eliminated! That the silver blackened by light is a mixture of the white chloride and metallic silver in a state of minute division has been experimentally demonstrated by Scheele, R. Hunt, Field, Davanne, Girard, and many other chemists. A few years ago I repeated the experiment first made by Scheele, and here are the results which, in my opinion, leave no doubt on the entire reduction of the silver chloride by the prolonged action of light: One hundred and fifty grains of freshly prepared silver chloride were divided in three bottles, cov-

ered with distilled water and exposed to sunshine. The water was decanted at night to prevent the chlorine from reacting on the reduced compound, and replaced for the subsequent exposure. The contents of each bottle was the fourth day thrown on a filter and the black substance washed. The whole of the filtrate gave with silver nitrate a precipitate of 46.05 grains of dry chloride, showing an elimination of 11.39 grains of chlorine—

(a) $34.66 \text{ Ag} + 11.39 \text{ Cl} = 46.05 \text{ Ag Cl}$.

The black substance treated with liquid ammonia was partly dissolved. The solution saturated with nitric acid gave a precipitate of 100.80 grains of white chloride. The undissolved part, a gray powder weighing 35.10 grains, treated by nitric acid, was not entirely dissolved, and the residue, too small to affect the result of the experiment, was not estimated. With chlorhydric acid this solution gave a precipitate of 45.78 grains of silver chloride, which shows that the gray powder was metallic silver—(b) $35.10 \text{ Ag} + 11.53 \text{ Cl} = 46.63 \text{ Ag Cl}$, or—(c) $34.455 \text{ Ag} + 11.325 \text{ Cl} = 45.78 \text{ Ag Cl}$, the difference being accounted for by the residue not estimated. In comparing these results, one finds that the quantity of chlorine found in the filtrate is very near the same as that which should have been disengaged from the insolated silver chloride to set free the gray substance, *i. e.*, the metallic silver:

(a) Chlorine in the filtrate 11.39 (b) Chlorine combined to silver 11.53 or (c) 11.325.

It is evident from these analyses that the insolated compound was a mixture of the white chloride and metallic silver; for if the silver chloride had been reduced to subchloride, the quantity of chlorine found in the filtrate (a) would have been one half less:

$35.10 \text{ Ag} + 57.68 \text{ Cl} = 40.868 \text{ Ag}^{\circ} \text{Cl}$.

If a phenomenon in which the changes of the progressive action of light can be seen at all the stages of the insolation and ascertained by analysis has led to different theories which, however, only differ by the admission of a more or less complete reduction of the silver salt, a still greater divergence must result from the researches when

in the experiments no observation can be made and no chemical means can detect the changes that have taken place. One is then guided only by the known behavior of the silver salt under the long influence of light, and must admit by analogy similar results, or investigate whether the phenomenon is not due to some disturbance in the atomic arrangement, as in the images of Möser. Hence the chemical and physical theories to explain the development of the invisible image by precipitation of silver in a nascent state of reduction. In the chemical theory the silver salt of the sensitive film is said either to be reduced to infinitesimal quantities and the image formed by the silver from the developer deposited upon it by molecular affinity, or to be converted into a subsilver salt which is reduced by the reagent (iron protosulphate or pyrogallie acid, etc.), the development proceeding then as above. In the physical theory one admits that no actual reduction has taken place, but that the molecular arrangement of the elements of the silver salt is altered more or less on those parts acted on by light, and that they acquire thus the property of attracting the silver when precipitated from the nitrate by the reagent.

Such were the theories admitted before the discovery of the alkaline development by Mr. Henry T. Anthony, of New York,* in 1862. This discovery, the most important ever made in photography, upset the physical theory, for the image being in the new process entirely formed of the metal from the insolated silver salt, it was thought impossible to explain the development otherwise than by a reduction continued by the alkaline reagent. The new chemical theory is based, as before, on the identity of visible and invisible image, although it does not necessarily follow that if a long insolation determines a reduction, an exposure of a fraction of a second effects the same result.

* Mr. A. does not claim the discovery of the alkaline development. He merely claims to have first used the vapor of ammonia in connection with a dry collodion plate in making negatives. At his suggestion Mr. Borda used it in connection with the tannin dry plate, and the report of his experiments led to the subsequent use of the alkaline development.—ED.

There are many chemicals besides the silver salts which by long exposure to light undergo a decomposition, but in which no alteration can be detected when they are exposed to that force during a short period. Heat also reduces certain compounds without, however, having any influence upon them if its action is limited, for an accumulation of force is always necessary to produce such a radical molecular change as a reduction, however that at the first contact the same force is capable of disturbing the atomic arrangement.

As to the development, the theory of photographers who admit the complete reduction is far from being satisfactory. A better explanation, also based on the affinity of the reagent for oxygen, is given by those who assume that the silver salt is reduced to a subsalt. It is as follows: In the presence of the developer the subsalt is reduced, and an equivalent of the metal combines with the unaltered silver salt just in contact with it to form a sub-salt, Ag_2N , which is in its turn reduced by the reagent, the reactions proceeding until all the silver salt is reduced. Thus the image is formed by the reduction of the unaltered silver salt into a sub-salt, and that of this sub-salt into metal. Whether such a double decomposition takes place can be ascertained by preparing the silver salt in the dark and placing it in the presence of silver in the nascent state of reduction as in photography. The experiment has been made, and a mixture of metallic silver and of the unaltered bromide has been the result of the operation. It is manifest, therefore, that the silver salt reduction cannot be effected by the affinity alone, but that the intervention of another force, that resulting from the persistence of the luminous action, is also necessary. If the phenomena cannot be scientifically explained by these theories, perhaps some light can be thrown upon them by investigating, not what is the result of the luminous action, but in what manner light acts to effect it. Before proceeding I think it will not be out of place to say a few words on the properties of matter and the physical forces that act upon it.

One knows that bodies are formed of an aggregate of particles, the atoms, which are the smallest component parts of the element, or elements, that constitute the mass, and that not only the atoms are indestructible, but as they are indestructible and indivisible they escape certain influences of heat and light that act upon their aggregate: the dilatation, for example, is the separation of the atoms from each other, not the expansion of the atoms themselves.

To conceive the extreme divisibility of matter, it suffices to state that the hundredth part of a cubic line of silver dissolved in nitric acid produces a nebulosity in 500 cubic inches of slightly salted water, so that the particles of silver in suspension must be at least the thousand-millionth part of a cubic line. As it is seen, bodies are formed of an inconceivable number of atoms kept together by the force of attraction. It should not be supposed, however, that they are juxtaposed so as to form a whole homogeneous mass, for the properties of bodies would otherwise be inexplicable, many of them, such as the elasticity; the cubical dilatation would even be impossible. It must be granted, on the contrary, that they do not touch, and that surrounded by an imponderable fluid subject to the forces always active in nature they are constantly in motion and oscillate around each other like the celestial bodies within certain limits, regulated by the attraction, unless another force, or an accumulation of the same force that keeps them in motion, comes into play and destroys the equilibrium. The natural forces that tend to dissociate the elements of the silver salts, the only phenomenon to be here considered, are light and heat.

The sources of light lie, according to the dynamic theory, in the motions of the elements of the sun which are transmitted by the vibrations imparted to the molecules of the imponderable atmosphere, the ether; but as the solar atoms vibrate with different speeds, other waves of greater amplitude than the various luminous ones and possessing a great thermic power are generated. Heat and light are consequently always united, and although in photography light

is the real actinic agent, both must play a certain part on the silver compounds. This can be ascertained by experiments. If a sensitive film is exposed to the sun's rays filtered through an alum solution which absorbs nearly all the heat, it will be less rapidly impressed than when heat and light act in conjunction; the heat, in the experiment being that of another pencil of light projected through a solution of iodine in sulphur of carbon, which stops the luminous rays. However, heat can determinate a dissociation either alone (oxydes, carbonate of silver, etc.), or in presence of an element capable of fixing one of the components, (chloride, iodide of silver, etc.) What is the action of heat in these phenomena? It is thus explained:

In coming in contact with a body, heat imparts to the ether a vibratory motion which, extending to the atoms, causes them to revolve around each other more and more rapidly, and as the centrifugal force progressively increases thereof they come apart at such a distance that the attraction is nullified and the molecules separate into their constituent elements. But light is also a form of motion differing only by the length of the period of vibrations from that which produces the heat, and under its action the dissociation cannot otherwise be explained. When a body is subjected to a moderate shock, the concussion is hardly perceptible, but let the shock strike it in rapid succession, the vibrations soon disintegrate it and the body splits into parts. Light acts in a similar manner. The luminous waves travel with a speed of 308 millions of meters per second; the most actinic visible wave, the violet, effects in the same period 728 millions of millions vibrations, and the ultra violet 900 millions of millions, the average for the chemical rays, so called, being 740 millions of millions vibrations. It is therefore conceivable that such a rapid succession of shocks imparts to certain bodies an atomic motion leading to the dissociation of their elements; moreover, that at the same moment the heat united to the light also determinates a vibration which, corresponding in time

with that from the luminous action, greatly increases the force that tends to destroy the equilibrium. Whether this theory be true or not, there is no doubt that the action of light is a dynamic action which causes the dissociation of the elements, without which no chemical reaction such as those of photography could take place. How far can an exposure of less than a thirtieth of a second affect the affinity that keeps the elements together? This is a question impossible to answer; but as no chemical test can show that any part of the haloid has been set free, it may be inferred that no reduction whatever has been effected, and there is only a tendency to dissociation affecting the affinity of the elements for each other, and thus placing them in a state of equilibrium favorable for other affinities to come into action. This being admitted, it is not necessary for the explanation of the phenomena of photography to resort to the formation of hypothetical salts and reactions not admissible in a science of facts like chemistry; whether the insolation be sufficient to dissociate the elements or to simply increase the distance that separates the atoms—which is probable in case of short exposures—the development is explained by the presence of a reagent whose affinity for one of the elements fixes it when the attraction is either nullified or modified, and thus effects a reduction which commences on the parts first in contact with light, and progressively extends more or less to the interior of the mass, according to the greater or lesser molecular perturbation resulting from the different vibratory powers of the luminous waves.

Mr. MASON. This paper by Mr. Duchochois I have read and think worthy of the attention of any gentleman interested in photography.

Mr. GARDNER. Dr. Ehrmann has a paper on the subject—

The Action of Light Upon the Salts of Silver,

Is the heading of Chapter II. on "*Chemical Effects of the Spectrum*," by Dr. Eder, translated by Captain Abney, and recently intro-

duced to general knowledge. This thorough review disables, so to say, everybody else in the attempt to make similar remarks on the same subject, and it is only left to us to attach to Dr. Eder's views those of other authorities and our own unpretentious opinions.

Photography is the art-science which teaches us to make pictures on surfaces with the aid of light and the intimate connection of chemical processes. Light produces certain changes upon nearly all matters, be they physical or chemical. Light induces fluorescence upon some bodies, while upon others again electric phenomena are observed to follow. *Light*, says Möser, acts upon all matter. It changes the color of our garments; it acts chemically on them, leading to certain changes or decompositions. It acts upon phosphorus, reducing it to the so-called red allotropic modification of it, but restores it to its original yellow state by heat. Oxygen under certain circumstances can be converted into its allotropism, ozone, and numberless metallic compounds can be decomposed into their constituents. The iodides of potassium, sodium and ammonium are sensitive to light, thus liberating free iodine.

The protoxides of iron, white or green (the oxalate excepted), are turned by light into yellow or red; they are oxidized; the perchloride loses one atom of its chlorine. Ferric oxalate and its beautiful double-salts lose their green color in light; they turn yellow; they are reduced to the ferrous salt. The salts of iron with organic bases are affected by light. Copper plate cleaned with muriatic acid turns black; the chloride of it is decomposed when other bodies are present to receive the liberated chlorine. The salts of chromium are sensitive; also those of uranium. With lead sun pictures have been made. Mercury and gold discharge a part of their chlorine, platinum and the platinoids act similarly. Of the salts of silver, let us first consider the oxide, the base with which acids form salts.

Of it we know three modifications—the brown, the black, the violet. They are all strong bases, react alkaline, attract carbonic

acid from the air, and are partly soluble in water. They are sensitive to light, especially to the violet, which turns black rapidly, resulting in a suboxide, while they form with hydrochloric acid a violet subchloride not soluble in nitric acid.—(*Vogel*).

Nitrate of silver is not decomposed by light when in its pure state, and can be kept for an indefinite time, provided no chloride or organic matter be present. This permanency of the pure chemical can be attributed to the protecting influence of the powerful oxidizing acid it contains. Organic matter added to it, neutralizes the effect of the acid, and reduces it to a condition nearly akin to what it would be if it were connected with an acid of weaker power.

Nitrate of silver in solution may, according to Mr. Hardwich, be also kept intact when exposed to light. Dr. Vogel holds that a decomposition takes place, separating very minute and black granules of metallic silver. With organic substances, such as albumen, gum, paper, etc., it blackens rapidly in blue light, while the red has no effect upon it. The rays of minimum activity are found in the middle of the yellow; the maximum in the middle of the blue.—(*Eder*.)

Ammonia nitrate of silver, a solution of oxide of silver, is sensitive to light. If to a solution of it pyrogallie acid be added, it soon turns dark, and a deposit settles to the bottom. This is metallic silver, and is formed by the removal of the oxygen of the oxide of silver.

Chloride of Silver.—The first investigations upon this highly important body stated that light acts upon it, partly decomposes it, leaving another part of it intact. Opinions expressed *pro et contra* led Vogel to consider the matter carefully, and he found that the liberation of chlorine gas is evident, and beyond any doubt proved by its odor. The liberation of chlorine having taken place, there can only remain either metallic silver, or a subchloride of it. Metallic silver is soluble in nitric acid, but it does not act upon the substance now before us, not even when heated to the boil-

ing point. Therefore the insoluble remnant can only be a subchloride.

My own views on the subject I have expressed to you before, and when I reiterate them, I merely state that I still adhere to them, encouraged in my opinions by those of many practical professionals as well as amateurs.

Chloride of silver exposed to light results in metallic silver and chlorine; a subchloride is not and can not be formed. The chlorine set free during the process converts the nitrate of silver mechanically adhering to the paper into chloride again. Such exchanges must take place over and over again, until the last particle of nitrate is changed into chloride and the last particle of chloride is reduced metallically, provided that, owing to the density of the negative, the printing can be carried up to that point. If the printing is interrupted, the reduction is incomplete, and the result is metallic silver and undecomposed chloride.

A subchloride does not form by an insufficient action of light, but the metallic silver will be in this case interspersed with undecomposed chloride.

Freshly precipitated chloride of silver, exposed for a long time to the action of light, does not suffer a complete reduction. The ebullition of chlorine gas is absorbed, the supernatant water absorbing it changing it finally to hydrochloric acid. The small particles of the chloride are darkened on the outside, remaining within an undecomposed core; the core is chloride of silver and the envelope metallic silver.

Davanne says chloride of silver in a very finely divided state may be reduced metallically, and Vogel admits it.

Hardwich, again, expresses himself differently: Precipitated chloride of silver exposed to light in a glass covered porcelain dish becomes thoroughly blackened. The properties of the substance thus obtained are as follows: a violet powder, which retains its color when boiled with strong nitric acid, but is immediately dissolved by ammonia or hyposulphite of soda, the greater part being dissolved as protochloride of silver, and a small quantity of a gray pow-

der remaining insoluble. This insoluble portion is gray and spongy, resembling the silver reduced by means of metallic zinc from chloride of silver; it is unaffected by acetic acid or ammonia, but easily dissolved by nitric acid, evolving nitrous fumes. These properties correspond with those of metallic silver, and hence it is reasonable to suppose that chloride of silver acted upon by light is reduced to the condition of a subchloride, which in passing through a fixing bath is decomposed into a protochloride of silver and metallic silver.

In a discussion before the Photographic Society of London, Prof. Hunt in answer to Mr. Hardwich says: I have before stated my firm conviction that in all cases the photographic image is formed by metallic silver in a state of very minute division. We find that pure chloride of silver exposed to the action of light upon a glass plate, and free from organic matter, does darken, and that the blackened matter is metallic silver in an allotropic condition; that when the blackening has gone on sufficiently far the black substance acts in all its chemical relations as if it were metallic silver; that is, it will not be dissolved by ammonia, as suboxide would be, but that it will be dissolved by nitric acid with a manifestation of red nitrous fumes.

Dr. Miller ventured to say that it cannot be considered certain that the blackened chloride of silver really does contain metallic silver. It is well known that the presence of free nitric acid in solution from which chloride of silver has been precipitated, though it greatly retards the action of light, yet it does not prevent it. If you take such a dilute solution of nitrate of silver in free acid, precipitate from it a quantity of chloride of silver and expose it to the action of light, in the course of a few hours the surface will be coated with a violet compound. Now this, be it observed, is in the presence of a powerful oxidizing agent, nitric acid, and hence it is highly improbable that this chloride of silver should contain metallic silver thus reduced, and therefore I should question the assertion that the black or violet compound is metallic silver.

Mr. Malone says: The whole question of chloride of silver deserves a thorough examination. We have first of all ordinary chloride of silver, a white substance which with free nitrate of silver speedily darkens in the light. Then again we have a dark compound of silver and chlorine which Mr. Becquerel calls violet chloride of silver. This he produced by immersing a silver plate in a perchloride, or by decomposing hydrochloric acid by a voltaic current, the silver plate forming the positive pole. It is not possible at present to ascertain its composition. It would not be fair to call it a subchloride in its ordinary sense, meaning two proportions of silver to one of chlorine. Then we have again a third modification or form of chloride of silver which Dr. Percy makes by throwing silver leaf into chlorine, and which does not darken, even in sunlight. Thus we see that we have chloride of silver, which darkens in the light, chloride of silver which refuses to darken, and chloride of silver which is dark when made, but which whitens under light. In view of these curious facts, and their relations to photography, it shows how cautious we should be in concluding upon the exact composition or decomposition occurring, or as to the nature of the chemical changes taking place under the action of light.

In concluding Prof. Hunt remarked: We certainly do not know of the existence of a subchloride of silver as spoken of. We know how nitric acid acts upon metallic silver, therefore we have decided evidence that the darkened surface of the photographic image dissolves in nitric acid; why should we dart off at a tangent about an imaginary something of which there is not the slightest evidence.

The different opinions on this important subject show conclusively that the question is not yet solved, how and in which way chloride of silver acts in making the photographic picture.

The action of the rays of the spectrum upon the silver chloride is described by Eder as follows: Pure chloride is chiefly changed and blackened in the regions from

blue to ultra violet. Silver chloride having taken a violet tone, acquires thereby the faculty of absorbing more strongly the yellow and orange rays of the spectrum, in such a manner that the rays which at first appeared to be inactive become active indeed.

Bromide of Silver.—Bromine enters with silver into two combinations, the bromide and subbromide, the latter of which is only known as a product of decomposition of the former. The bromide is a pale yellowish-grey caseous precipitate, very slightly soluble in ammonia, but readily so in all the other solvents for chloride. Light colors it pale greenish-violet with a distinct liberation of bromine. The remaining precipitate is not soluble in nitric acid. Silver bromide is therefore decomposed by light into bromide and subbromide of silver.—(*Vogel*).

Silver bromide discolours as a general rule more rapidly than the iodide of the same metal. A small quantity of free nitrate of silver aids the decomposition. Prepared with an excess of soluble bromide with gelatine, and a sufficiently long exposure, it gives an image from the ultra violet into the red. The blue and the violet rays have the strongest effects; the red, on the other hand, the least. Bromide of silver in a wet collodion plate is particularly sensitive to the more refracted rays in the blue of the visible spectrum when development takes place by the aid of ferrous sulphate; on the other hand, silver bromide in a dry collodion plate shows a greater sensitiveness to color, and is impressed by the rays as far as the orange and even the infra red.

Iodide of Silver.—Two modifications of iodide of silver are known. The one is a caseous, dark-yellow precipitate, and is formed with nitrate of silver in excess; in light it colors to a grayish-green. The other is of a light yellow color, and is caused when during its formation the iodide of the alkali prevails. It is of a powdery nature, and is not affected by light. It is reasonable to suppose that if iodide of silver were exposed to light, iodine would be liberated similarly as in the cases of chloride or bromide; but

that is not so, and neither sulphuret of carbon, nor the starch-test proves the slightest trace of it. Many theories have been formed to establish the process, but from that of a physical change to the formation of a super-iodide neither is tenable. It is, however, fair to presume that iodide *per se* does not change chemically, but requires for its decomposition in light a substance with which the decomposed elements may combine.

Of the process of making a picture upon an iodized collodion film Mr. Hardwich offers two theories, the second of which seems to be the most feasible: Light does not exert a reduction of the iodide of silver. A molecular change is supposed to take place, not, however, separating the iodine from the silver by the developer. The relation of the component particles of the iodide of silver towards each other is modified in such a way that the reduction of the nitrate in contact with the particles is facilitated, and the deposit of metal so formed is caused to adhere.

If an imperfectly developed negative is fixed in either hypo. or cyanide, removing all the iodide of silver on the plate, a very feeble or weak negative will remain. This feeble image can be treated again with a fresh dose of the developer, to which nitrate of silver has been added. It will soon become more intense, and will continue to do so as long as the supply of nitrate of silver is not exhausted. Even upon an unfixed plate the same rule holds good. The deposit forms only upon the image, and not at all upon the other parts of the plate. This is a direct proof that the image forms from the nitrate and not from the iodide of silver.

Vogel has remarked that the chemical action of the different colors of the spectrum is totally different. It differs accordingly as pure salts of silver are applied with the addition of silver nitrate or an organic sensitizer. The sensitiveness towards the red then increases in a notable degree. Silver iodide in the wet state is less sensitive to green. The manner in which silver iodide behaves when exposed to light with

free nitrate of silver is very remarkable. Its sensitiveness increases from the ultra-violet to G as its maximum. The indigo blue shows, therefore, the maximum of sensitiveness of the iodide of silver.

Mixtures of the chlorides, bromides and iodides of silver ordinarily unite the qualities of each of their constituents. The sensitiveness to color is considerably more in a mixture of iodide and bromide than in both of the two salts taken separately.

Fluoride of Silver—is much less sensitive to light than either of the haloids spoken of before. Fluorides have been coquetted with in the earlier days of photography, but no distinct success with them is on record. Mr. Husnik has lately recommended the use of fluoride of sodium in emulsions, with which he claims to be able to make extremely intense negatives, fit for *process work*. Let us take that *cum grano salis*.

There is a very sensitive double salt of silver which deserves our attention, not for its usefulness to the operator, but for its destructive qualities. I refer to the double salt of hyposulphite of soda and hyposulphite of silver, formed during the fixing of gelatine emulsion plates.

$\text{Na O, S}_2 \text{ O}_2$, $\text{Ag O, S}_2 \text{ O}_2$ is formed when a salt of silver is in excess of the hypo.

This combination is decomposed under the influence of light in the very moment of its formation, the result being sulphuret of silver. Such a reaction is undoubtedly the cause of certain yellow or brown stains, appearing principally on the thicker parts of the film, and which can never be removed. Gelatine is but slowly penetrated by hyposulphite of soda. As it acts upon the upper stratum of the film, a soluble double salt ($\text{Na O, S}_2 \text{ O}_2$) $2 + (\text{Ag O S}_2 \text{ O}_2)$ is formed, which meeting with an excess of bromide of silver is bound to the salt spoken of before, which is insoluble, very sensitive to light, and easily decomposed, when a separation of sulphur takes place. To avoid such occurrences it is necessary to fix with all light excluded, and a hypo. bath as strong as the gelatine will bear.

The salts of silver with organic acids are more or less all sensitive to light. Among the most noteworthy are the citrates, oxalates, acetates, etc. Nitrate of silver forms with proteine matter bodies with which we have daily to deal. The whites of eggs, albumen, forms with nitrate of silver a white coagulum, which contains protoxide of silver, and which has been termed albumenate of silver. On exposure to light this substance turns brick-red, which is due to a deoxidizing action of the light.

Caseine resembles albumen in its action to light when in contact with nitrate of silver, excepting that the precipitate occurring is red in the beginning.

Gelatine produces no precipitate in solutions of nitrate of silver, and does not accelerate the action of light upon photographically prepared paper, as the substances mentioned before will do. A sheet of gelatine swelled in a nitrate of silver solution assumes a clear yellow tint, becomes brown, and lastly dark red. When treated with boiling water it does not dissolve, it merely expands and becomes granular on the surface.

Citrate of Silver, so frequently added to our printing solutions, is formed when a soluble citrate is added to a solution of nitrate of silver. Pure citrate of silver paper prints red, and remains so after being fixed. The addition of citrate to the chloride renders the tone of the picture warmer, and to some more agreeable; its sensitiveness to light is less than that of pure chloride of silver. Pure citrate paper prints slowly.

The employment of citrate of silver in photographic printing rests upon theoretical grounds. It is one of those bodies which admit of conversion into a red subsalt of silver by the action of light, being analogous to the albumenate of silver, and the compound formed of albumen and nitrate of silver.

The PRESIDENT. Mr. Seeley is here and we should like to hear from him, as he is supposed to know all that is knowable on this subject.

Mr. SEELEY. I consider these two papers very valuable. In one like the first the

close reasoning and the intricate facts makes it not quite suited for a platform discourse; but I think the papers are both valuable, the last for the presentation of facts. I think it was Dr. John W. Draper, our old president, who made the first suggestion that the darkened chloride of silver, instead of being a subchloride of silver, was an allotropic form of metallic silver. He took the pure chloride of silver, floated it in distilled water, in a glass globe, and exposed it to light. Mr. Duchochois gives us weights and measures, and I know I can credit anything he says as to what he has found by weighing and measuring. It seems a shame that we have had photography now nearly half a century, and we are more ignorant of the *modus operandi* of certain things than in any other art.

Mr. ROCHE. These two papers are very valuable, and I would like to see them published. There is one action of light that I have not heard discussed. Time and again I have exposed plates—the old-fashioned collodion plates—developed some of the negatives, and put away some without developing. These plates, if kept for about two months, then taken out of doors and exposed again, will produce a new picture. Now what has become of the action of light made by the first exposure?

Mr. MASON. I think the suggestion thrown out in Mr. Duchochois's paper goes far towards leading us to investigate this question. If the light is of such a peculiar action, and the plate kept long enough, the action is nullified.

Mr. JAHR. The occurrence Mr. Roche speaks of is due to a certain amount of bromide left in the film, which is supposed to combine with the bromide which has been produced by the action of light, and to give the original bromide of silver in the collodion dry plate process. It is a well known occurrence when plates are kept long enough, there is nothing to be seen; the action of light seems to diminish it very much. In the case Mr. Roche speaks of, of plates prepared in the bath and washed off, I really do not know; I have not heard of it before.

The PRESIDENT. It is not to be supposed that we can solve all the problems that nature presents, especially in the action of light. It is one of the most intricate of all the phenomena.

One of our eminent chemists, M. Carey Lea, several years ago promulgated the theory that the action of light on the sensitive salts of silver was mechanical, and not chemical. To prove his position, he instituted a series of very interesting experiments, and the results were published in many of the photographic journals in this and foreign countries. One of these consisted in making a negative in the dark room, without exposing it to the action of any light. A sensitive film was prepared, and a medallion or uneven surface was brought gently into contact; it was then removed and the developer applied in the usual way. According to Mr. Lea's statement, a negative was developed the same or similar to what would have resulted had it been exposed to the light.

In one of the papers read to night it was stated that pure nitrate of silver was not acted on by light. Many years ago I made some experiments bearing on this subject. I placed a quantity of pure crystals of nitrate of silver in a thin flat bottle, and exposed them to light for three months, turning the bottle every few days. Before exposing the crystals I tested and found them perfectly neutral. At the expiration of the three months I made a solution of these crystals in distilled water, and that solution was found to be decidedly alkaline. I exhibited a quantity of it at a meeting of this Section, when Prof. Joy was its president and present.

He then and there submitted it to the ordinary tests and found the solution decidedly alkaline. Up to about that time the opinion currently prevailed that a negative could not be made in a bath that was not acid. But with this alkaline bath perfect negatives were made. The important question which arose was, from whence did the alkaline present in the bath come? That question still remains unanswered.

The theory was advanced many years

ago by Edmund Becquerel, that no actinic power was resident in the red or orange rays. This was shown to be erroneous by a committee appointed by this Section to investigate the subject, which was brought to its notice by Mr. Wm. Gaensli, of Bahia, S. A., who presented a carefully prepared paper thereon, a report of which was published at the time.

In that report it was stated that actinism was a property of light resident in *all the rays* in the ratio of their wave lengths.

Another extraordinary action of light upon sensitive films is shown in the opposite effects obtained by different exposures. To illustrate. Take a sensitive dry plate and expose it behind a negative in an ordinary printing-frame to gaslight for two or three seconds, and on development a positive is produced. Another plate of the same kind exposed under the same negative to sunlight for one or two minutes, according to its density, on development will produce a negative. This is another of the perplexing problems to which I alluded.

It has been shown that the sensitiveness of iodide and bromide of silver depend mainly on the constituents of the compound and somewhat on the method of compounding them.

The iodide of silver, the iodide being in excess, is not sensitive to light, photographically speaking. The bromide, however, the bromide being in excess, is somewhat sensitive, but not so sensitive as when the silver is in excess. In my experiments in the preparation of bromide of silver emulsions, I have always made them with the silver in excess and left them so until the maximum sensitiveness was reached; then the excess of silver was removed by the addition of chloride. When this condition is attained the addition of a bromide will not prove detrimental to its sensitiveness, but it will enhance its brilliancy and clear the emulsion from fog, if so affected.

Mr. ROCHE. Does that apply to a collodion or to a gelatine emulsion?

Mr. NEWTON. To both or either of them. The theories heretofore advanced by Hardwich and other writers on the sub-

ject of chloride of silver to the action of light was, that it was not sensitive to light except in contact with organic matter.

It has generally been supposed that an alkaline condition of the chloride of silver produced by the fumes of ammonia or otherwise increased its sensitiveness. This may be correct, to a certain extent, but there are conditions where an acid will render the chloride of silver more sensitive than an alkali, which may be shown in the following manner: If we sensitize an ordinary sheet of photographic paper prepared with arrowroot or its equivalent, hang it up until it ceases to drip, and before curling place it back down in a solution of citric acid, five grains to the ounce of water, let it remain for two or three minutes, and when dry it will be found four or five times more sensitive than without the acid treatment. Nearly the same effect will be had with albumen paper, but the uneven action on the albumen is liable to induce a mottled effect.

I desire to thank the Executive Committee for the work they have done, and feel that I express the sentiments of the Section in doing so.

MR. SEELEY. In one of the recent photographic journals in the report of the meeting there was an allusion made to myself which requires explanation. The Secretary said that there were constantly coming up inventions of old processes. Several gentlemen had claimed the invention of the fuming process, which he had discovered in a journal older by several years than the date they claimed. The Secretary made the remark in a way which made it appear that I was one of those who claimed the invention of the fuming process several years after it had been published in an old journal, and I think it calls for a little protest on my part. In 1860 Mr. W. Campbell, of Jersey City, published in my journal (the *American Journal of Photography*, copies of which relating to this matter are now in the American Institute Library), the fuming process applied to plain paper. Two years after I myself published the process of using the fumes of ammonia upon albumenized paper, giving the credit to Mr.

Campbell, and referring to his article on the use of such a process on plain paper. The matter was alluded to several times by me, and Mr. Campbell's part in the matter was always mentioned. About ten months after my article appeared somebody in England published the process as applied to albumenized paper in such a way as to claim originality. Shortly after that the friends of Mr. H. T. Anthony, who were correspondents of foreign papers, claimed that the credit of the invention of the process was due to him. When spoken to about it I have referred to the journal. I did not immediately claim any merit in the matter further than that subsequently I published my own experiments. Mr. Anthony never appeared personally in the discussion until recently, so now he says: "I was the first to fume." Mr. Anthony was very careful in what he said. He was the first to fume albumen paper. I think that is all the statement Mr. Anthony is willing to make.*

Mr. Campbell's process was not useful in any way. The method of printing on plain paper before his time was perfectly simple, and any theories supplied by Mr. Campbell would only be a complication. The question of the albumenized paper involved a new issue. I happened to take up Mr. Hardwich's book, and it says nothing about the fuming process whatever. It describes the albumen paper process, but he says that the ammonia-nitrate process is not applicable to albumenized paper.

Mr. Campbell's process was before the world two years or more and no one found it out. I published it first—the details and facts that could only be determined by experiment. It was afterwards claimed by several parties in the city. The process

* In the Feb. No. of the BULLETIN Mr. Anthony made a truthful statement of all the circumstances connected with his discovery of the use of ammonia in connection with albumenized paper. He is perfectly willing to concede to Mr. Campbell, or any other experimenter, all proper credit for what they may have originated, but he here desires to state distinctly that he never knew of Mr. Campbell's publication until it is here mentioned by Mr. Seeley, and he could not, therefore, have been in any way indebted to it.—EDITOR.

was sold for five or ten dollars all over the country. Mr. Campbell should always be mentioned in connection with the process; but his invention was of no benefit until it had been made practicable.

Mr. ROCHE. I should be very sorry to contradict Mr. Seeley, but that process was used commercially for years by Mr. H. T. Anthony previous to any publication, and the formula was first published by Mr. Coleman Sellers in the *British Journal of Photography*, with the consent of Mr. H. T. Anthony. According to *Humphrey's Journal*, Mr. Seeley paid three dollars for the same process, which was being sold at that time by circular.

Mr. MASON. As my name has been brought in I distinctly remember that I made no reference to Mr. Seeley, and I did not mean him in my remarks. I am not responsible for the reports of the meetings that are published. I examine the proof sheets of one journal occasionally. I did not state the matter as Mr. Seeley understood it. I happen to have Mr. Seeley's journal and every number of *Humphrey's*. In Mr. Seeley's journal in 1857 or '58 there was published the trial of an experiment with silvered-paper, given in detail.

Recently Mr. Anthony fixes a date at which he claims to have invented this process. I think he fixes it at 1861 or 1862.

I will bring the printed paper to the September meeting and hope we shall have a lively time, as I think it is about time this was settled.

Mr. SEELEY. Three years after the publication of Mr. Campbell's process, it was claimed for Mr. H. T. Anthony by Mr. Coleman Sellers in the *London Photographic News*, and the three dollars Mr. Roche refers to was paid for a pamphlet describing the process and printed by Mr. A. Turner of this city. I reproduced it in the *Journal*, denouncing it as a false claim, and referred to that of Mr. Campbell's three years before, and my own. My friend, Mr. Duchois will recall these facts. Mr. Roche has probably not looked over the facts lately.

The PRESIDENT. It is customary to have a field day during our vacation, and a com-

mittee must be appointed to make the necessary arrangements to render it pleasant and enjoyable. It was moved and seconded that the Chairman be authorized to appoint the committee. Carried.

The PRESIDENT. I will not appoint this committee to-night.

Mr. SEELEY. I am sorry I made such an allusion to the Secretary, as he did not mean me in his remarks. As I read the article it seemed to refer to me.

Adjourned.

Association of Operative Photographers of New York.

NO. 392 BOWERY,
NEW YORK, JUNE 4, 1884.

IN the absence of the Secretary, Mr. Schaidner took his place and read the minutes of the last meeting, which when corrected were adopted.

The receipt of the *British Journal, Photographic News*, ANTHONY'S BULLETIN, *Photographic Times*, *Philadelphia Photographer* and May number of *Photography* was acknowledged.

Mr. SCHAIDNER. The subject this evening was to have been on printing. I have seen several parties who promised to come to-night, but they have disappointed us and we must do the best we can with what we have. There has been a great deal said about artistic printing—tho' negatives require more of it—and I think it would be a good subject to begin with. At Kurtz's they would take a dry plate negative with weak shadows, and cover the shadows with a little opaque. I would like to know if that is artistic printing?

Mr. BUEHLER. There is no doubt that dry plate negatives require different treatment from the wet, owing to a lack of experience on the part of the operator. The relation between the high lights and the deep shadows in the dry plate differ from those in the wet. I would like to know the opinion of some practical men in relation thereto. It is a point of great interest, because operators are blamed for making their plates too intense, or the reverse, and it is hard to hit the right course.

Mr. ATWOOD. In the matter of artistic printing I do not know that it can be made a specialty. One must use his own judgment in the matter.

Mr. BUEHLER. Do you find that dry plates differ materially from wet plates in regard to printing?

Mr. ATWOOD. Not in the least.

Mr. SCHAIDNER. Mr. Hendrickson said that the artistic work of the future in the photographic gallery would lie in the printing room.

Mr. ATWOOD. There can be no rule laid down. A man must use his own judgment.

Mr. HECKLE. I have a good many interiors to print, and sometimes the ceilings are only a black mass. In some of the rooms the calcium light has to be used.

Mr. BUEHLER. It is true the printer with taste can improve a negative. Still printing in itself, especially silver printing, has not progressed, while the process of making negatives, on the other hand, has entirely changed. Printing is just the same to-day that it was five or six years ago, and there is no prospect of any material improvement.

Mr. SCHAIDNER. There is a great difference in the printing of vignettes, and there is much art in it. Mr. Sprotter can tell us something about this.

Mr. SPOTTER. In making a vignette, when we have a weak negative we use more tissue, but it never affords a print equal to a good negative. If the silver is too strong it looks muddy. A good many people print a strong negative in the shade. We do the opposite, and get a great deal softer print.

Mr. BUEHLER. There is nothing new in that. I can understand that it rests very much with the printer. It depends also upon the man who made the negative—how he arranged his accessories. I have seen printing done from two or three negatives to make a group, and that I call art.

Mr. ACKER. Groups printed together require a good deal of judgment in their treatment.

Mr. SCHAIDNER. I like a vignette where the lower portion is not cut off sharply, but

where the lower marginal lines are properly shaded off.

Mr. MILTENBERGER. Some years ago, in one of the periodicals, I read a letter from Mr. Lambert. He said that photographic silver printing was done for. A year or two afterwards the dry plates came out. I found it at first more difficult to make a good print from them than from negatives by the wet collodion process. The first dry plates were not negatives; they were positives. I think the art of printing is simple. One printer takes a negative and prints in an oval. Another would print it plain vignette or oval, as his judgment dictated. The latter would be more artistic than the first. In printing from a weak negative, use a stronger bath than for a strong negative; and fume the paper more for a strong negative than for a weak one. In Germany very few fume the paper, but they use a stronger bath, from sixty to eighty grains, and silver from four to five minutes. A weak negative treated in this way makes a better print than with paper silvered in a weak bath and fumed for half an hour.

Mr. BUEHLER. Do you find any difficulty in using the dry plates more than the wet?

Mr. MILTENBERGER. A good dry plate will make as good a print as a collodion plate.

Mr. ACKER. When I made a vignette the other day, I had to put the frame in a certain position so that the sun would shine on it directly without shadow. Mr. Sprotter prepares his frames as he pleases, and gets them straight.

Mr. BUEHLER. I have seen in a German periodical prints that were very artistic in appearance. I think they were printed in Dresden. They were excellent pictures, and looked as though they had been done by an artist.

Mr. ACKER. I think it is understood that dry plates differ more or less in quality from others; some are strong and some weak, and a man needs to have judgment to work them.

Mr. BUEHLER. It is supposed that dry

plate work is up to the standard of wet plate; if it is not so now, it will be in the near future. It is hardly possible considering that a man, having to print from a hundred negatives a day, can bestow much attention on every one of them. He is compelled by the time and light at his command to hurry out a certain number of prints, and this prevents many a one from doing full justice to each.

Mr. ATWOOD. The general rule now is, speed—the amount of work, not the quality. A printer can relieve the shadows or doctor the negative in that way. He must use his own judgment. We do not know whether the paper is prepared with one grain of salt or twenty.

Mr. HECKLE. If you have a hard negative and expose the paper a little before you print from it, it will soften it very much.

Mr. ACKER. I think part of the artistic printing Mr. Buehler referred to, such as printing in backgrounds and groups, will decrease. It is done more or less in the smaller galleries, where they do not have backgrounds. In larger galleries such a case seldom occurred. They have the backgrounds made for whatever scene they wish; and their instruments are much better than those owned by the smaller galleries.

Mr. SCHAIDNER. All that I can understand in reference to vignettes is, it is a matter of judgment in the hands of the printer. I have a mode by which I can make them look almost like an india-ink picture.

Mr. ATWOOD. There are a dozen good works on photographic printing that printers know nothing about. Now here is a picture I would call artistic in this book, *The Art of Silver Printing*. On page 80 there is a description of it.

Mr. SCHAIDNER. It seems hard to discuss a point of that kind. Mr. Coonley read a paper before the Cooper Institute on *Art in Connection with Photography*, a short time ago. He said that we should connect art with photography, but did not say in what way. He said that the retouchers spoiled all the negatives, or as

much as said that. Even at Mora's, where I thought everybody was artistic, there was no art. Every picture was overworked.

Mr. MILTENBERGER. Some time ago I had to make a print from a 14 x 17 negative of a lady. There was a deep yellow stain in the middle of the plate. We had another negative taken of the background. I printed that part of the original negative from the second negative, so that the print was made of two negatives. One was not quite as intense as the other, and there was a slight difference in tone; but you could not distinguish the marginal lines.

Mr. BUEHLER. Does anyone know how Moreno makes those pictures with the cloudy backgrounds?

Mr. SPOTTER. Mr. Seavey has a patent for those backgrounds.*

Mr. ATWOOD. I understand he has a certain tinted glass, I don't know how large, the centre of which is clear. The clouds are painted by Seavey on this glass, and the subject is placed behind the glass.

Mr. BUEHLER. Has anybody found trouble in focussing through glass?

Mr. MILTENBERGER. Some time ago I had to take a view in Philadelphia. The room I was in had a very large window, which moved on a pivot. I had to set the camera behind the window and take the view through the glass.

Mr. BUEHLER. If the glass is good it does no harm to take a picture through a closed window. When making a copy, for instance, it has a softening effect, and does not show the grain of the paper.

Mr. SCHAIDNER. In many cases when copying prints on albumen paper, if put behind a glass they take much better. Mr. Field might tell us something interesting in the matter.

Mr. FIELD. I am not engaged in artistic but in commercial photography, and I am not familiar enough with printing, as I am an operator.

Adjourned.

* Mr. Moreno has already published his *modus operandi* in the BULLETIN and applied for a patent.
—EDITOR.

The German Photographic Society of New York.

THE regular meeting of the Society was held on the 13th of June, President GUBELMAN in the chair.

ANTHONY'S BULLETIN, and other periodicals were received with thanks.

Mr. JAHR, chairman of the literary committee, announced the subject to be *Instantaneous Views*.

Pres. GUBELMAN. For making instantaneous street or marine views I employ exclusively Dallmeyer's rapid rectilinear lenses with medium to smallest stops, with what success you can see from these specimens. I find street scenes to be easier than water scenes; for the former I prefer a slightly cloudy sky, because it will give a softer picture by avoiding the heavy shadows, and does not need any more time. In marine views the water itself reflects so much light everywhere that it lessens the heavy contrasts.

In putting up my camera for street views I never omit to use the level, in order to get my lines straight, and never use a swing back, in fact my camera has none; therefore I do not lose any time in focussing, as I know exactly how far I have to pull my bellows out by marks on the platform for each particular lens. On top of the camera in front are two little nails at an equal distance from the center, which correspond with the size of the plate. On the back exactly in the center is a ring (screw eye), through which I only need to look in order to see the field within the two nails, which will make my picture. This arrangement is essential for moving objects, like a ship, as after my instrument is up and the slide drawn, I have only to look through the screw eye, and as soon as the ship is in the center and suitable in size I can shoot away. In case I am on board of a tug or steam boat the difficulty is to catch the picture just when it is neither too high nor too low; but a wire frame on the front top will make it possible to get it always in the center. It is of great importance to have a good shutter. A drop shutter is not quick

enough without rubber bands, which are apt to shake the camera. In the one I use a spring moves two cutouts in opposite directions past the lens, thus neutralizing each other's force, and can be adjusted to any rapidity. A rubber bulb and hose is used for setting the spring free. I estimate my time of exposure from $\frac{1}{100}$ th to $\frac{1}{200}$ th of a second. This shutter is at the back of the lens, and I believe that I get a little more exposure or light on the plate than if the shutter were in front. Any strange light is also excluded, that may come through the opening for the stops or elsewhere.

Now for the developer. There are so many good developers recommended that it is really hard to select one as being the very best. However, I work with success the following formula:

Stock Solution.

Carbonate of soda,	. . .	25 grains.
Sulphite of soda,	. . .	4 "
to each ounce of water.		

For use, take four grains of dry pyrogalllic acid to each three ounces of the stock solution. I always use the pyro dry, as a solution of it necessitates an addition of acid, and acid restrains. It may be said that it is so little of it; but you must remember how brief an exposure I must give my plate, so that I can't afford to lose anything, however little.

For under-exposure a little carbonate of soda is added, for over-exposure bromide of potassium, and I endeavor to avoid a strengthener. To get an A No. 1 negative you must give correct time. You can doctor a negative and get a fair one from a plate that is much overtimed, but hardly a perfect one. If you value a negative, then never strengthen it; but if it must be, take weak mercury and ammonia and wash very well.

Mr. JAHR. Mr. Gubelman, who is in his line undoubtedly one of the best or the best photographer we have here in America, has given us some of his valuable experience, for which he deserves our thanks. The sharpness of his instantaneous pictures speak for his shutter, the fine chemical effect for

his manipulating, and the selection of objects for his artistic eye.

In not using a swing back outdoors he is correct, but in portrait work it is necessary. I would recommend his way of developing, too, if it was not so difficult to get the right amount of pyro. at a guess. It takes certainly much practice, for which reason I prefer a solution; but I don't think a formula good that mixes pyro., sulphite of soda and citric acid in water together. As the common sulphite of soda is usually alkaline, it contains a considerable amount of carbonate of soda; to neutralize that it takes too much citric acid and forms citrate of soda, which is one of the best restrainers we have, consequently we have to give more time. I take 30 grains citric acid or 30 minims of nitric acid to 12 grains of water and 1 ounce of pyro., and keep the sulphite of soda with the ammonia or carbonate of soda, whatever may be used. Each ounce of this developer contains 1 to 2 grains of pyro. and $\frac{1}{10}$ th to $\frac{1}{30}$ th of a grain of citric acid, a quantity which is too small to have any restraining effect. The mercury intensifier is much abused, but Col. Stuart Wortley has collodion negatives from the year 1861 that were treated with it, and have not changed yet.

MR. ESSELBORN. That Mr Gubelman uses his shutter back of the lens is certainly better than in front; but I think it impossible that it can give him more light on his plate. The shutter is open for a certain time, and a certain amount of light passes, no matter where the shutter is placed.

MR. NAGEL showed a number of instantaneous pictures of horses taken with Steinheil's Aplanatic, which were liked very much. The meeting then adjourned.

LUDWIG SCHILL, *Sec'y.*

The Society of the Amateur Photographers of New York.

THE opening of the new permanent rooms of the above society occurred on June 4th, in the Sloane Building at 1262 Broadway, and was celebrated by a lantern exhibition of slides made by amateurs, em-

bracing a variety of subjects. The lantern was skillfully handled by Mr. Geo. Johnson, an amateur of some note and a resident of Bridgeport, Conn.

A fine opportunity was afforded during the evening for a comparison of wet plate slides with those made on albumen gelatine plates, and it must be said, some slides made by Mr. James Brush equalled and in some respects surpassed those made on wet plates in brilliancy, clearness and crispness. They excited the admiration of all present and demonstrated the possibilities of gelatine plates. Many other interesting pictures were shown, and the first exhibition of this kind proved to be very successful. We understand it is the intention of the society to own a lantern and give frequent lantern exhibitions during the coming fall and winter. It was an interesting feature of the evening to notice the presence of several ladies. After the close of the exhibition an informal reception took place, during which members and their friends examined and inspected the arrangements provided for the former. The dark room, 18 feet by 8, occupied one corner of the main hall, the interior being fitted up with sinks, faucets, shelves and ruby lamps all conveniently arranged for work. On the side of the room opposite these were a series of lockers, in which members are to keep their chemicals, graduates, pans, etc.

It is expected these conveniences will be used largely by those members who have to put up with very poor dark room accommodations, and will prove to be quite a feature in the future. Double doors are arranged at the entrance to the dark room. At the rear of the main hall is placed the presiding officer's desk, and at the front on Broadway is a large library table on which all the files of current English and American photographic literature may be found, including copies of English and American patents.

Near the table is a neat library case filled with all the latest and best works on photography, many of which have been furnished by the various publishers, including Messrs. E. & H. T. Anthony & Co., of this

city. The white walls of the hall furnish an excellent screen for the lantern, and served that purpose with good effect when the pictures were thrown up. The very rapid increase in the membership of the Society since its organization indicates its great popularity among amateurs, and their desire to learn from each other the best methods and processes.

The first regular meeting was held in their new hall on June 10th. Among many interesting communications that were read was one from Messrs Anthony & Co., wherein they generously donated many valuable photographic books, and several handsome view albums, in which the choice pictures of members are to be mounted and preserved.

The liberal spirit manifested by this house and others was the subject of some remarks by Mr. Walker, who argued that it was no more than right, in view of the increasing trade of amateurs, that such houses should deal liberally with the Society.

A vote of thanks was passed to Messrs. Anthony & Co., and to others, when the chairman called upon Mr. H. J. Newton, who in response gave the members a new formula for developer, as follows:

No. 1.

Water,	32 ounces.
Dried carbonate of soda,	3 "
Carbonate of potash,	3 "
Sulphite of soda,	3 "

No. 2.

Water,	12 ounces.
Concentrated formic acid,	12 minims.
Pyrogallie acid,	48 grains.

To develop a 5 x 8 plate which has had a rapid exposure, take water three-quarters of an ounce and add thereto one quarter of an ounce of No. 1 and one ounce of No. 2, making two ounces of developing solution.

The pyro. solution can be made more concentrated, if desired, and for long exposures the quantity of No. 1 can be greatly reduced, while for drop shutter exposures it

can be doubled and trebled with good effect. Mr. Newton considered formic acid the next best to phosphoric acid as a preservative for pyro., and claimed that it was also a developer in itself, which would make it especially useful in the development of instantaneously exposed plates. A few slides were shown in the lantern, and an exhibition then followed of Mr. G. F. Peersall's improved camera, and its advantages and merits were set forth by Mr. Paddinghouse.

A large number of members were present, and the meeting adjourned at a late hour.

The first field excursion of the Society was to be taken on the 20th of June, going by rail to Peekskill and by steam yacht up through the Hudson to beyond West Point.

The Lowell Association of Amateur Photographers.

MESSRS. ANTHONY & CO.

At a meeting of this Association, held on the evening of the 15th inst., it was unanimously voted that the thanks of this Association be tendered you in recognition of your kindness in contributing regular numbers of the BULLETIN for our instruction.

Very truly yours,

R. F. HEMENWAY.

Rochester Photographic Society.

THE regular meeting of the Rochester Photographic Society was held at the rooms in the Walbridge Buildings, June 16. The following questions were submitted for discussion at the next meeting: "Should a shutter be placed before or behind a lens?" and "What is a good formula for toning ready sensitized paper a dark purple?"

Mr. INGLIS gave some interesting experience in developing. During the semi-centennial parade, on a very dark day and with a short exposure, he took several views of the procession. In developing, he used an excess of potash, the proportions being one-half dram of pyro., three drams of potash,

and two ounces of water. After developing nearly twenty minutes, he obtained details but not density. His patience surrendered, and he added sufficient pyro. to compensate for the former excess of potash, and secured all the density desired. The results, as shown, were very satisfactory.

The BULLETIN, the *Eye*, and other journals have been received. After discussion, the Society adjourned for two weeks.

Cincinnati Amateur Photo. Club.

THE first business meeting of the Cincinnati Amateur Photographic Club in their new quarters was held May 19th, with seventeen members present.

A report of the Board of Management, giving a summary of their proceedings in securing and fitting up the club room and dark room was read and approved.

The SECRETARY reported receipt of the following publications, and was directed to transmit to the donors the thanks of the club.

From Messrs. E. & H. T. Anthony & Co. The PHOTOGRAPHIC BULLETIN for 1884; *How to make Photographs; Modern Dry Plates*, by Dr. J. M. Eder; *The Art and Practice of Silver Printing*, by H. P. Robinson and Capt. Abney, and *The Silver Sunbeam*.

The following resolution, offered by Mr. Geo. McLaughlin, was adopted.

The Board of Management shall, whenever they see fit, place the membership of an Amateur Photographic Association of any other city upon a list to be known as The General Correspondence List, and thereafter any member of such association shall, while in this city, have use of the rooms of this club for a period not exceeding two weeks.

On motion, the following committees were appointed by the president.

Drs. W. A. Dun and H. J. Groesbeck to arrange for exchange of proceedings, books, views, etc., with other amateur clubs.

Messrs. L. M. Petitdidier, Geo. McLaughlin and Geo. Bullock to solicit from mem-

bers pictures for decoration of the club room.

Messrs. H. F. Farny, Henry H. Vail and L. M. Petitdidier to arrange for the club exhibitions and outdoor meetings, the first of the outdoor meetings to be held June 6.

Names of two candidates were presented for membership, and the club adjourned to June 5, the date of next regular meeting.

E. J. CARPENTER, Sec'y.

THE State of Illinois Photographers' Association recently held a meeting at the Bryant Institute, 81 State City, Chicago, but nothing was elicited of general interest that has not already been published.

THE following correspondence explains itself. We are pleased to publish these letters in response to some insinuations that have recently appeared in the journals:

CLEVELAND, O., May 23d, 1884.

ED. PHOTOGRAPHY.

Dear Sir: As in your issue of the 15th inst. you give prominence to "hearsay," and indulge freely in comment on the strength of such uncertain material, I feel called upon, as a member of the Executive Committee, to reply.

You tell us there is grumbling among those who contributed liberally toward the expenses of the last convention, P. A. of A., because no proper statement of expenditures was made, and that a prominent house will not contribute one cent for the expenses of the future until such statement is forthcoming, and this stubborn stand is taken in the face of our invitation to "Pony up."

Since this house, which clamors for a report, did not contribute one dollar to the fund last year, its resolution is amusing.

As every manufacturer of photographic requisites, and every dealer in photographic goods is supported in his business by the working photographer; as the yearly conventions and exhibitions are quite as much in the stock dealers' interest as in the photographers'; as the P. A. of A. is a ship of

the stock dealers' launching and lading—a ship whose "coming in" means profit to him—I believe it very proper that he help pay the expense of sailing.

As an individual, I will not undertake to make a report—which belongs to the committee to do—but I will promise the grumblers that the *rottenness in Denmark* may come to the front at the next convention, when a report can show who the contributors were, and, if necessary, who failed in that important matter. If it be shown that the executive committee have feasted on sweet-cake at the stock dealers' expense, they must be *frowned down*. In the meantime contributions are in order. W. A. Armstrong, treasurer, Milwaukee, will be glad to receive contributions from parties entitled to make them, and dues from members. It costs money to run conventions, and the treasury is not bursting.

Respectfully,
J. F. RYDER.

ROCHESTER, N. Y., May 24, 1884.

EDITOR PHOTOGRAPHY.

Dear Sir: My attention has just been called to the article on the first page of your journal for May 15th in regard to affairs of the P. A. of A., and it occurred to me that it might have been better if the criticism therein had been made to the executive committee, and not given to the public.

The Association, to be successful at the coming convention, should have no obstacles thrown in its way.

Leaving out of question entirely the justice or injustice of the strictures, it does seem to me that the publishers of photographic journals should be interested in aiding, rather than injuring, the chances of success of the society.

It is true that no report of expenditures has been given by Treasurer Reid, and that fact might, of course, to some have a suspicious look; but, as you are aware, the present officers of the society are not those of last year, and are not wholly responsible for the acts of their predecessors. If it is desirable that the Association should be con-

tinued and built up, it will not be done by throwing cold water on the acts of last year's officers.

In regard to the second matter spoken of in your article, I must say I was considerably disappointed in the appearance of the Secretary's report. It was not as complete as I supposed it would be, and I was particularly distressed at the prominence given the President in that article. I left the matter in the hands of the Secretary, and trusted it would be complete.

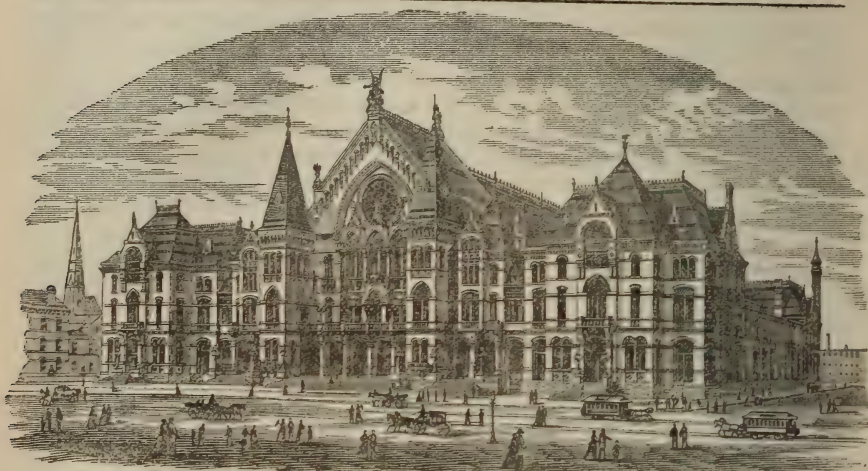
However, I may say there was nothing suppressed that was intended to be covered up, and so far as I am aware there was nothing in "Denmark" that was not in an excellent state of preservation.

Very truly yours,
J. H. KENT.

The Sight of Artistic Treasures.

Napoleon Sarony, Photographer.—I wish more people knew what an interesting art-museum there is in these rooms of mine. I want them to come in freely and make a rendezvous of it. Not from a business point of view, for if you notice that is sunk here as much as possible. My clerks have that little desk in the far corner, and no one who enters is ever asked if he wants anything, but may sit round all day. I think the constant sight of artistic treasures exercises the greatest influence for good on the minds of all. To my mind South Kensington has exercised its chief influence for good, which has been incalculable, through its magnificent museums, and not through its schools. Our young designers especially feel the want of objects for study. Hence it is that the imported designer is most in demand.—*N. Y. Tribune.*

WE have received a circular announcing the rules governing the Second Annual Competitive Exhibition of the Boston Society of Amateur Photographers, which unfortunately must lie over until next month for want of space.



PHOTOGRAPHIC CONVENTION.

JULY 29, 1884.

A FEW short weeks only intervene, my friends, before the annual meeting; and this is our last opportunity for appeal to your enthusiasm, your efforts, and for your best work. Still in these few weeks by vigorous application and unanimity of purpose a great deal can be achieved, and the outcome will be undoubted inspiration to us all—much practical help, and, ultimately, the means of elevating the profession to a higher level.

While I am conscious of the extraordinary strides made in every direction the last year, outstripping the most sanguine imagination, we yet expect to see at this our Fifth Annual Convention more startling and grander results—evidences of more serious application and deeper thought.

The imperus we gain from these exhibitions cannot be overestimated. The entire year is invigorated by them—a tonic we could not now well dispense with. They sensibly and insensibly develop latent talent that otherwise might die out.

There are many reasons why this Con-

vention should be a memorable one in our history.

The world moves, and we have not been left. Perhaps the most potent of all reasons is the ocular proof we shall then have of the progress in dry plate work, its already assured and popular hold on us, and its suggestive possibilities for the future.

It will be an occasion of mutual assistance up the steep incline we are all ambitiously struggling to ascend—an occasion of good cheer and pleasant intercourse that will decorate our mental galleries with pictures fair to look upon in the year to come. With all of these valuable inducements let no mere trifle prevent your attendance.

Fraternally yours,

J. H. KENT, *Pres. P. A. of A.*

Onward to Cincinnati and the Photographic Convention to be held July 29, '84.

TO THE FRATERNITY:

The coming Convention will be one of the finest exhibitions that has ever been held, and every photographer who loves the art should lay aside his work and come, and try to induce his brother photographers to

come also. We have received many applications for photographic exhibits, and with pleasure announce that the fraternity are awake, and will make Cincinnati feel proud of the Convention. The Exposition Commissioners are up in arms, and will try to induce the exhibitors to leave their work for the Exposition also. The skylight under which the demonstrations will take place will be the leading feature. It is situated in the Horticultural department, and will be put in first-class order. Its beautiful cascade and fountains will afford a number of splendid views. To the right of the platform will be the meeting room, where chairs will be provided, so that you can have a fine view of everything that transpires on the platform. There will be abundant room for everybody, so that all can see.

From the reports we receive daily it is believed that the approaching one will eclipse any of the former exhibitions. Therefore, my friends, don't stay at home, but let us come together and try to work in unison and with a will. Those who intend to exhibit will please not forget to mark their goods in plain letters, with the name on the reverse side of the lid. In all cases have the packages prepaid and sent to my address, care of Music Hall, Cincinnati, O. Those wanting railroad certificates should also address the Secretary for them. Now, for the last time, don't fail to come. Hoping to see you all at the largest photographic exhibition ever held,

I am, yours fraternally,

LEO. WEINGARTNER, *Sec. P. A. of A.*

If you wish to improve an opportunity while in Cincinnati, take a good look at the novelties on exhibition there.



The Fifth Annual Convention of the P. A. of A.

OPENS July 29th and continues to Aug. 1st.

It will be held at Music Hall, Cincinnati.

IT WILL BE A STUNNER!!

The finest exhibition of dry plate work ever shown will be there.

The best methods and the highest skilled experts to demonstrate them will be there.

A THOUSAND PHOTOGRAPHERS WILL BE THERE.

The best opportunity ever offered for securing knowledge will be given.

Solid sociability will run high.

Some fun will be had.

BY ALL MEANS, GO!

J. F. R., of *Ex. Com.*

MR. JOHN A. FRITH of St. Georges, Bermuda, has sent us a fine interior of the Military Church. Mr. Frith says that it was made from a wet plate with Anthony's No. 1 Negative Cotton and materials. A singular fact is noticeable—the lens was placed *dead* against the light of a large window and there is not a trace of halation visible, while all the details are preserved.

Now is the time for Tropical Plates.

Is Photography an Art?

*The Personality of the Photographer and its Effect upon Sitters.**

NATURE'S POSSIBILITIES.

THAT peculiar American institution the "Interview," it will be observed, has reached the photographic journals, and we find it by no means an unpleasant method of bringing out a discussion on material points of our art, which possibly would be inaccessible in the more formal essay or communication.

"Is photography an art?" was our first question which we hoped would be the key note to the discussion of an interesting subject. A quick response was the result.

"Is photography an art?" is still the undecided question between the disciples of the brush and those who stand under the photographic skylight. A distinguished writer defines the artisan or mechanic as one who reproduces or copies objects as they present themselves; an artist represents them. Objects controlled by chance present themselves unconsciously and helplessly at their best or worst, and to this presentation the mere artisan as unconsciously and helplessly submits. But the artist, conscious of the best capabilities of the object, first controls their presentation and then their representation. One is the master, the other the slave. In other words, one is a hand-worker, the other a soul-worker. Now this is a little bit high flown, but true as to the definition of mechanism and art. From want of a little careful thought many minds fail to make the distinction. In the sun, or photo-chemistry, we have a perfect artisan as the instrument of art, which sets the artist apart from his instrument. Now you are aware that many people insist that photography is nothing but a mechanical art. The truth is, in my opinion, photographic portraiture has a scope for the artist as truly as in painting, with the advantage of an instru-

ment to which no human hand can be compared."

Instantaneous Photography Analyzed.

"Beyond art or mechanism is the personality of the photographer. If his presence or manner curdles the milk of human kindness in the sitter, it will come out in his visage. Instantaneous photography catches the flash of the soul—the interior state at the moment. In still life there is required only the artisan; but dealing with the human face the photographer himself must be the inspiration which shall wake from the inner life of the sitter, in some measure, a reflection of his best possible mental status. To do this ranges above all art. What passes for a good likeness is often not a characteristic one."

"Well, Mr. Rockwood, what, then, would be your ideal as a photographer?"

The Ideal Photographer.

"My ideal of the best photographer is one who is most the Chesterfield in his manners. A Daniel Huntington in his art, a Bacon in his range of information, a small edition of Shakespeare in his knowledge of human nature, and is possessed of the genial humor of Dickens. As sure as the chameleon reflects the hue of its surroundings so is the sitter to reflect in some measure the mood of the photographer who sits him."

Artistic and Personal Requirements.

"Undoubtedly there are many photographers who possess neither art nor culture, but there are representatives of the profession whose work reaches the plane of fine art. Both of my friends, Sarony and Kurtz, were artists before they were photographers, and how admirably it shows in their work. Both are also men of culture, and I have seen pictures from them which were poems. There is something, subtle and indefinable though it be, in photographic portraiture by the true artist which discloses its artistic source as truly as the literary polish is disclosed in the writings or conversation of a classically educated man; and I mean by classically educated an education that would

* Interview with Mr. George G. Rockwood.

pass muster as such with Matthew Arnold."

"Aside from the mental impression upon the sitter, in what manner is the sphere of the artist exercised or applied?"

Before answering, Mr. Rockwood placed himself in a sharp, severe light. "Now," said he, "you see I appear ten years older than I am; but as I go from place to place under the skylight and adjust the light, I grow apparently younger, until now (placing himself in a soft flood of light) I appear younger than my real age. To answer your question directly, then, the artistic effort is applied to develop all there is comely in face and figure and conceal or prevent any exaggeration of defects; to make, so far as possible, every form a line of beauty and of grace. This is accomplished, as I have intimated, by the careful disposition of the figure, the lines of the drapery and a consideration of the *action* desirable to indicate the action; with a quiet, passive temperament, too much action would give a dramatic or stagy effect, while a certain repose should be sought even with the most active, nervous temperaments. Startling, dramatic poses in the quiet, stately mother of a family not only fail to be characteristic but destroy the retirement of the modest subject before the camera."

The Arrangement of Light.

"The arrangement of light is also an important factor. By its judicious management a lean man can be made to appear more robust, and our jolly fat friend brought to assume more comely proportions. Sir Thomas Lawrence used to paint his subjects as they *ought* to be. The same power in a degree we have in the arrangement of light, the disposition of the lines and the position and proper elevation of the camera. One of my most satisfactory results was in photographing a stout lady, whom I made to appear somewhat tall, graceful and slender,"

"In your long experience and endeavors to interest sitters, you must have had some very interesting conversations and incidents with public men?"

Peculiarities of Great Men.

"Yes," said Mr. Rockwood, "and none more so than with the founder of the *New York Tribune*. He was always adverse to being photographed, but after many broken engagements Mr. Greeley at last came to me. It was without doubt the most trying time in his whole life; a time when a moment spent in rest or recreation seemed to him to have been wasted. It was just after the 'On to Richmond' article, when from all sides he was being most mercilessly abused. Having placed him in position, and observing that he appeared dull and heavy, I thought I would arouse some fire in him by reference to the agitation, and asked: 'Mr. Greeley, don't you feel there is great lukewarmness on the part of the *Evening* — in its support of the war, and do you not think that Mr. — is but half hearted in his personal loyalty to you?' I desired when he began to answer to check him and hold the unuttered words in abeyance while I exposed the plate and, as I hoped, secured the eager look in his eye. My answer was a gentle snore. Poor Mr. Greeley, fagged and worn, was sound asleep!"

"You must have had also some good chances to study the peculiarities of many great men in your gallery."

"An experience of nearly twenty-five years," resumed the photographer, "in meeting people in this way has developed some incidents which, owing to the prominent position of the parties, are of interest to meditate upon. I have much regretted that I did not make immediate record of these conversations with great men as they occurred, for many times I have been enabled to unbend them to an unusual degree. I can not enumerate all, but will mention some. There was Willis, the poet (of Idlewild)—I mention them just as they occur to me—George Bancroft, Martin Van Buren, James T. Brady, William Cullen Bryant, William M. Evarts, General Sedgwick, General Wool, General Anderson, of Fort Sumter; Bayard Taylor, Winfield Scott, Henry Ward Beecher, Governor John A.

Andrew, Gerrit Smith, John A. Dix, John Cochrane, etc. Excepting Mr. Bryant, who was always reserved and reticent with strangers, I could not select from the one hundred and forty thousand names on my register the same number of persons who were more unpretentious, affable and agreeable in their manner than these, and more easily led into conversation."

Willis, the Poet of Idlewild.

"Willis was always overflowing with kindly sentiment, and had the faculty of making every one about him feel that they possessed his fullest confidence. When he came to my gallery he threw down a large, flowing mantle, such as is seldom worn nowadays, but on him a picturesque, and, as I said to him, a comfortable garment. 'Yes,' said Willis, 'it is both elegant and a protection; a gentleman should always go properly costumed, but in no eccentric style.' After a few further remarks he said, with considerable feeling: 'Nothing ever annoyed me so much as the accusation that I was a fop. Do you know,' said he, 'that one little foible or peculiarity will sometimes totally neutralize a man's usefulness as a worker? Can it be, after all that I have written, and all the conscientious efforts I have put forth for my fellow creatures, that in the twilight of my days I am to be put down as a fop?'"

President Martin Van Buren.

"The picture I made of Ex-President Martin Van Buren was the last taken of him before his death. Upon meeting him I at once discovered the secret of the influence he had over his friends. It seemed to be in the genial, whole-hearted kindness of his manner. He was punctiliously polite, even asking for the assistant operator to bid him 'good morning' as he departed, a courtesy that his satellites omitted even to me.

"General Scott was a frequent patron, and always glad to converse on any of the great historical events of his life. The hero of two great wars, that of 1812 with Great Britain, and with Mexico, 1843, he took a

not unreasonable pride in speaking of them. One day just before the Rebellion, when he seemed in deep thought, I said to him: 'General, you caused me a pretty long walk once.' 'In what manner?' inquired he. 'Well, when you visited Saratoga in the summer of 1849 I was at boarding-school near Balston Spa, and, hearing that General Scott was in Saratoga, a number of the boys asked the privilege of going up to see him. As some had been suffering from too much study and too little exercise, our teacher, Rev. Theo. Babcock, granted the privilege, provided we *walked*. The distance was seven miles each way. So our desire to see the hero of Lundy's Lane cost me, with the sight seeing at Saratoga, a walk of about twenty miles; but, General, I had a good "composition" the next week.'

Hero of Lundy's Lane.

"This allusion to Lundy's Lane aroused the old hero, and rising from his seat he lifted his hand and voice, and exclaimed with great earnestness: 'Aye, young man, Lundy's Lane was a sharp battle, and one of the most important events of my life. The story of Colonel Miller was no fiction, and his remark when told to capture the hilltop battery, 'I'll try, sir!' an absolute occurrence.' As the General towered up there he was a grand and magnificent picture. Few men so perfectly looked the greatness that belonged to them; and yet how gentle and genial. The last time he was in the gallery his loving daughter was tenderly arranging his hair and cravat preparatory to the picture. 'My dear,' said he, with a merry twinkle in his eye, 'tis useless for you to try to make me pretty, for, to tell the truth, I don't think I have been growing beautiful for the past ten years.' This was the last photograph ever made of Winfield Scott."

The Man of Long Sentences.

"One of the names I mention is that of a lawyer, than whom none stands higher either before the bar or in the councils of the nation. He was one of ten representative Americans who were photographed for the

Bryant testimonial (Mr. Bryant's seventieth birthday book.) He was almost the last one to come to me, and then with bad grace, remarked that my effort would in all probability be much like those made before—failures! I replied that good judges usually rendered their decisions after the trial of a case. This produced a sort of sepulchral smile on his gaunt face and opened the way to conversation and in the end to a successful portrait. Having made two sittings I remarked that the three-quarter view or almost profile was altogether the best, and that this series of pictures that I was engaged in making had been a confirmation of a favorite theory of mine, that that view of the typical American head was usually the best; that force of character, strength of purpose and large perception being the American characteristics, an almost profile view of the head was the one that depicted in good form these qualities. This interested him; but I added in a despairing tone: 'I cannot make that portrait of you, as seven of the ten have already been photographed in that way, and if I add yours there will be a stupid uniformity in the series.' 'Stupid or not, sir,' he replied; 'if that is the best view of my head, let some one else suffer; I won't!' So you see greatness has its weakness!"

Are we a Two-Sided People?

"The late James T. Brady, another prominent name in law, was in the gallery shortly afterward, when I found some difficulty in deciding which side of the face was best. I finally chose a position, when Mr. Brady remarked quizzically: 'Well, has my learned friend decided which aspect is the most comely?' 'Oh, yes, Mr. Brady,' I said; 'you are not an exception to the general rule.' Said he, 'What is the ruling on that point?' 'The ruling is, sir, that in most all faces the left side is the most natural and affords the best expression and likeness.'" Rising out of his seat he exclaimed in a very serio-bombastic style: 'Do you propose to humbug this Court and jury with the assertion that I am a two-sided people?'"

The Lamented Bayard Taylor.

"Bayard Taylor's much travelling made him of exceedingly easy address, and free not only to converse but to express opinions. After making his picture, he pointed to a portrait and asked if I made it. I replied in the affirmative. 'Well,' said he, 'when that man was before your camera, you made a picture of the cleverest fellow and the most colossal liar that ever breathed! A man full of conceit and deceit.'"

"I must come back to Mr. Greeley; for the sleeping picture was not the last shot I had at him. During the presidential campaign in which he figured he invited me to Chappaqua. It was a cool day in October, and a glorious fire of wood, cut by Mr. Greeley's own hand, was blazing on the hearth. Upon entering the room he dropped into a large, easy chair, and without removing hat or coat was soon, to my dismay, sound asleep again! What to do I knew not. An important committee was expected every moment, and yet I had not the heart to disturb him. General Cochrane coming in relieved me, and we soon had Mr. Greeley out under the trees, with an axe upon his shoulder and black cotton gloves upon his hands. How like Gladstone even in his personal habits! I secured a picture which pleased him very much, and which was used extensively in the campaign that followed."

A Magnificent Talker.

"Speaking of General Cochrane, who managed the Greeley campaign, I think," said Mr. Rockwood, "he is one of the most magnificent talkers I have ever met. I can not conceive of a man possessing such refinement and culture having anything to do with politics. He is a picturesque man, but not eccentric; or, if eccentric, with his strong head and manly bearing the peculiarity of his dress is not *outré*. On the day he came we were soon in hearty conversation, which naturally led to art. Speaking of some exquisite small carvings I had recently seen, I said they were worthy

of what I had read as a boy of Benevenuto Cellini. Never did a fine toned organ stop respond more promptly to the touch than did the General as he began to pace the room, and for half an hour he recounted the events of the hero in whom we were both so interested. Afterward I heard of General Cochrane visiting a gathering of artists in Washington, where he was without warning called upon to say a few words upon art. For forty minutes he spoke with the most wonderful fervor, indicative of a mind stored in an unusual degree with the best knowledge and traditions of art."

Millionaires and Knickerbockers.

"Who of the merchant princes and millionaires have you photographed?" again interposed your correspondent.

"I could not," said Mr. Rockwood, "name them all to you. This is in a degree a family gallery. I have had the Howlands, the Stewarts, the Astors, the Macys, the Potters (the ecclesiastical branch), Hamilton Fish, the Stuyvesants, and many other Knickerbocker families, whose second and third generations have come to me. Mr. John Jacob Astor I may mention as a representative. He is a large, powerfully built man, with a face full of both force and gentleness. He is somewhat reticent, but not in any way morose. After a brief sitting he seemed in some haste to get to his office. I asked if he observed any regular office hours? He seemed quite amused that he should be exempted from any of the duties of other business men, and assured me that his day's work at that time was not only a long but an arduous one! A hundred millions, I thought, and yet have to work for a living and clothes!"

A Quiet but Important Customer.

"One day when the gallery was full of ladies and children a gentleman stepped into the operating room, and pulling out a newspaper began to read. Thinking he was a merchant who would be glad to get down to business, I remarked in passing that I hoped to get some one to give way for him; that business men did not submit to long

delays with good grace. 'Not out of my turn,' said he. In a few moments, seeing a favorable opportunity, I told him I could now make a negative of him if he would kindly show me his card, meaning the card usually given out at the office to designate the style and size of picture desired. He handed me a small bit of pasteboard, upon which was engraved—

Rutherford B. Hayes.

"The President had thus unobtrusively called in response to a request of Mrs. Hayes, who had been in the gallery a few days before. The ladies who had kept him waiting were quite disturbed, for they had no knowledge of the quiet gentleman who had so patiently 'bided his time.' His only imprudence was the kissing of a beautiful little child, which climbed upon his knee, and his omission to kiss all the rest. The mother decided to have her child sit again, that she might perpetuate the President's kiss—baby's dimples did seem a little stronger.

"This was the last year of Mr. Hayes's term, and many gentlemen who were considered in the presidential race were in the gallery, among the rest General and Senator Sherman. The lines in the General's face were rather firm, and it was only when he found that my assistant had photographed him when he was a lieutenant that we succeeded in modifying the soldierly expression.

Making the Egyptian Sphinx Smile.

"When his brother, the Senator, came to me a short time afterward, I thought there was about as much hope of making the Egyptian Sphinx smile as softening that almost severe expression on the Secretary's face. Finally, when all ready, I asked: 'If our present Secretary of the Treasury should go into the White House, what under the sun are we to do for a Secretary?' 'Ask your mother,' said he, as his face lighted up, and I secured my picture. 'But what will my mother say?' I asked, wondering what he meant. 'She will tell you there are as good fish in the sea as ever came out of it.' The picture obtained was

afterward engraved, is now used on one of the Treasury notes in circulation, and is generally considered a fine one.

"One not in the business can but slightly realize how photography develops what we might call the *human* side of human nature. In no art or profession does the practitioner deal so directly with that most sensitive of human qualities, the vanities of mankind. I believe all have it in some degree. If this crops out at no other time; if the subjects are habitually careless, even to slovenliness; when they come, so to speak, to put themselves on record one finds that the plainest, homeliest and the most beautiful are equally anxious that the photographer should make the most of nature's possibilities. If the photographer discovers this early in his career he will seek the ideal which I have mapped out to you. You ask how my high range of photography is to be reached? My dear fellow, there's the rub. I am striving for it. I trust I have made you see that there is more in photographic portraiture than is commonly supposed."

Anthony's Celebrated Transparency Dry Plates.

For Lantern Slides, Window Transparencies, Micro-Enlargements, Contact Printing, and Copying Through the Camera.

WE have just introduced the above, which will be found superior to anything heretofore made. These plates are prepared by an entirely new process, are guaranteed to work perfectly free from fog, and to possess extraordinary latitude in exposure. For transparencies they yield absolutely clear high lights.

What is thought of them may be seen in the following unsolicited testimonials:

NEW YORK, May 28, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Dear Sirs: Having used all the different kinds of plates that I could purchase for lantern transparencies, of which I have made several thousands, I desire to state

that the "Anthony Transparency Plates" excel them all in working qualities, chemical action and tone. I have experimented carefully with intense, fogged and thin negatives, and find that by using a little common sense and the Anthony Transparency Plates, exquisite slides for the lantern can be made. The latitude in exposure is almost beyond belief. While printing by contact last evening, I made two transparencies from the same negative, one of less than four seconds' exposure, the other of eighteen; I then developed them in the same dish simultaneously, and that which received eighteen seconds' exposure developed quickly, while the other developed slowly. After fixing, I could not tell which was which. For developer I use old oxalate and iron solutions, well acidified. The exposure is made by simply holding the printing-frame about two feet from a good gas jet.

D. L. ELMENDORF.

CENTRAL PARK, JUNE 12, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Dear Sirs: It affords me great pleasure to say that I have found your new transparency dry plates infinitely better than any others. Of several brands, reputed to be good, none compare with them. With the former I have had many failures; with your new plates I have achieved good results.

Respectfully,

E. B. SOUTHWICK.

Botanist and Entomologist.

NEW YORK, June 2, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Dear Sirs: It is with great pleasure that I commend to my fellow amateurs your new "Anthony's Unrivalled Transparency Dry Plates." The success which I have met warrants me in believing that any one cannot fail to do likewise. All honor to our worthy friend Roche. I am, with best respects,

Yours, etc.,

E. J. MILLS.

Strange, but True.

Anthony's Celebrated Transparency Dry Plates, strange as it may seem, after the developer has once commenced its action, may be developed fully in broad daylight,

or by an ordinary lamp or gaslight. Exposure to daylight during the subsequent operations will not prove detrimental.

Respectfully, H. TRODT.

66½ PINE STREET, N. Y., June 6, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Herewith I send you a set of 8 x 10 photo-micrograph negatives made upon the Roche transparency plates by lamplight. One negative shows the transverse, one the radial longitudinal, and one the tangential longitudinal section of the wood *Robinia Pseudacacia*, common locust, enlarged from one-tenth of an inch diameter to ten inches, or one hundred times in diameter.

You will notice the sharpness and clearness over the entire plates. The definition of minute details in the so-called "high lights" is the surprise and admiration of all who have seen the negatives, the results being so much better in this respect than what we are in the habit of obtaining. Trusting that you will not only enjoy the negatives as evidences of the progress of photography, but pass many pleasant hours of recreation and instruction in examining the beautiful and wonderful structure so clearly shown,

I remain, yours truly,

P. H. DUDLEY.

It is with great pleasure that we acknowledge the receipt from Prof. Dudley of these suggestive evidences of the progress of what has been so appropriately designated as the "beautiful art," an art so admirably adapted to the propagation and perpetuation of everything beautiful and useful in the sky, earth and air. These are certainly the most astonishing micro-enlargements of woody fibre we have ever seen.

For the present these plates are made in two sizes only, viz., 3½ x 4½ inches, per dozen, \$0 70; 4 x 5, per dozen, \$1 05.

E. & H. T. ANTHONY & CO.

THE Travellers' Insurance Co. of Hartford, Conn., have done a creditable thing, viz., they have contributed a large sum to-

wards the Bartholdi Statue Pedestal fund, and generously given a handsome *press* copy in colors to every editor in the country. Now let us have the statue itself.

Our Illustrations

FOR the month are supplied by Mr. C. F. Conly of No. 465 Washington Street, Boston. They were made on the celebrated Brilliant N. P. A. Pensé albumen paper, from negatives on Eastman's Special dry plates. Mr. Conly also kindly did the printing. So charming a little subject, not to speak of the general excellence of the portrait, will appeal to all admirers of the beautiful, whether in art or in nature.

Precaution for Hot Weather,

To prevent frilling or melting of the film of Anthony's Rapid Printing Paper. See that all your solutions are cool, and after developing, but before fixing, put the proof in a solution of—

Common alum, 1 ounce.

Cold water, 16 ounces.

Allow to remain in this for one minute; then wash and fix in a fresh solution of hypo.

Anthony's Waterproof Retouching Varnish for Gelatine Negatives.

Directions.

DRIVE off all moisture from the negative by heating, and afterwards allow it to become quite cool; then apply the varnish in the usual manner. Let the coating dry perfectly; it is then ready for retouching without grinding or any other preparation. Neither water nor moisture penetrate it.

As the solvents are inflammable, the varnishing should be done in a room free from flame or fire.

None genuine unless signed,

E. Anthony

CORRESPONDENCE.

COOPERSTOWN, N. Y., April 29, 1884.

E. & H. T. ANTHONY & Co.

Gentlemen: The 11 x 14 camera is received and tried. It works to a charm in every respect. The improved plate-holder is a perfect gem.

W. G. SMITH.

FENTON, MICH., June 18, 1884.

E. & H. T. ANTHONY & Co.

Gentlemen: I congratulate you on bringing out the BEST VIEW CAMERA that has ever been invented. Respectfully,

J. H. PHIPPS.

PHILADELPHIA, April 10, 1884.

E. & H. T. ANTHONY & Co.

Gentlemen: Your very handsome catalogue has been received. We think it the most complete we have seen in the trade. Please accept our thanks for the same.

Yours truly,

BUCHANAN, SMEDLEY & BROMLEY.

CINCINNATI, O., May 26, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gentlemen: Please accept thanks of the Club for the books you so kindly sent us. They form a very desirable addition to our library. By order of the Club,

Yours very respectfully,

E. J. CARPENTER,

Sec'y Cin. Am. Photo. Club.

YONKERS, N. Y., June 13, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gents: I enclose you the first two attempts of mine at photography with your Platyscope lens and 5 x 8 camera. If you desire you may paste them in your amateur album at your store, as an example of what a person totally unskilled in the art can do with your platyscope lens and instrument.

Respectfully yours,

R. EICKEMEYER, JR.

CINCINNATI, O., May 2, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gentlemen: Please let me have list of your photographic publications, and let me know rates at which they can be supplied to our photographic amateurs.

The Club has fitted up comfortable quarters (on Fourth Street near Walnut), where we have a dark room 10 x 13 feet and club room with excellent north light—a fair place for members to practice any sort of indoor work. Our dark room we propose making a model of its class.

For a beginning we have twenty-eight members, and after our exhibition of next week we shall perhaps have more.

Yours very truly,

E. J. CARPENTER.

WILLETT'S POINT, May 19, 1884.

EDITOR BULLETIN.

Dear Sir: I have promised to send you a detailed account of the results of my experiments with the modified hydrokinone developer, but could not find time to do so, and shall have to postpone it till some time later.

The formula, as used with the negatives and transparencies now in your possession, is as follows:

No. 1.

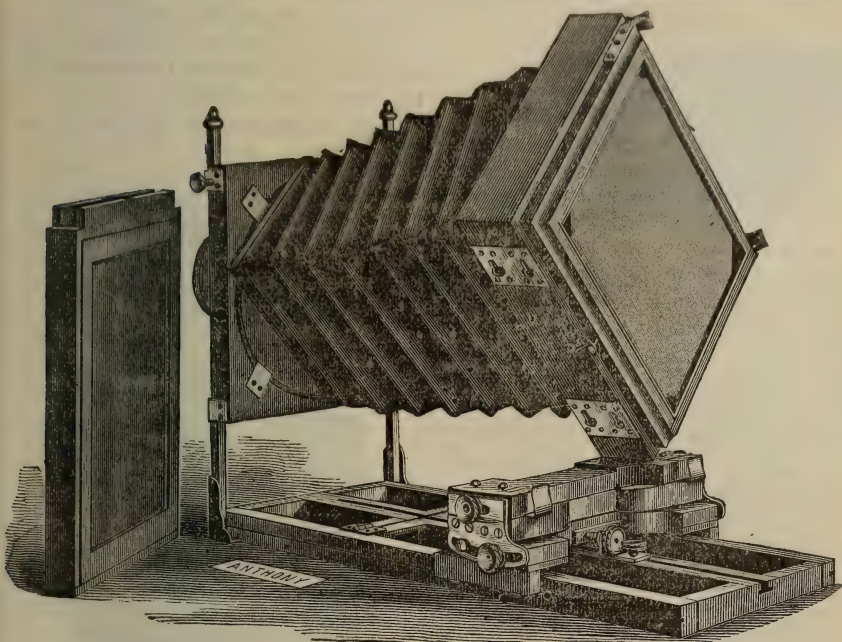
Carbonate of soda, . . . 60 grains.
Water, 1 ounce.

No. 2.

Sulphite of soda, . . . 30 grains.
Hydrokinone, 12 "
Water, 1 ounce.

For use mix one ounce of No. 1 with two ounces of No. 2. Restraining with bromide is unnecessary, but improves the tone. A strong alum bath should be used before fixing, if an "engraving black" is desired; otherwise the tone would be brownish, or, rather, chocolate.

The energy of this developer is to that of "Cooper's pyro." about as 7 to 10, and to that of ferrous oxalate (1-4) as 7 to 9. The exposure should therefore be proportionate-



The Novel Camera.

By general consent, the Novel Camera is admitted to be the simplest, best, and most convenient of the many forms of cameras yet offered for use with the gelatino-bromide dry plate.

Being the lightest camera in the market, and at the same time the most readily arranged of any either for portraiture (upright) or landscapes (horizontal) on any given size of plate, it possesses all the requirements desired by the professional or amateur photographer. In fact, it may be said to be the *only one* combining the movements *necessary* for both classes of work. As will be seen by the wood-cut, the camera may not alone be employed for the ordinary purposes of the amateur in outdoor work, but is instantly changeable to the upright position for portraits, and possesses

a single or double swinging movement of the back, as may be desired, which admits of bringing simultaneously into focus the head and feet of sitting figures and the two extremes of a group not exactly in the focal plane of the lens.

It is for sale by all dealers.

E. & H. T. ANTHONY & Co.

Mr. T. C. Roche.

OUR Spanish namesake from the Pearl of the Antilles has honored Mr. T. C. Roche with a photo-mechanical reproduction of his portrait as published in our April number, and also printed the response of that gentleman and other facts in connection with the presentation of the testimonial then given. It was very kind. Long live the

BOLETIN FOTOGRAFICO.

Now is the time to try the Tropicals.

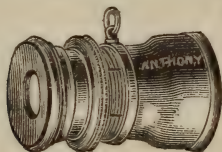
Ebonite Trays.



ONE of the latest and best trays yet introduced for the development of dry plates is that known as the Ebonite. It is easily kept clean, having a polished surface of high finish. A novel feature in its construction consists of two slightly raised ridges on the bottom, which prevent the plate from adhering to the tray. The prices are:

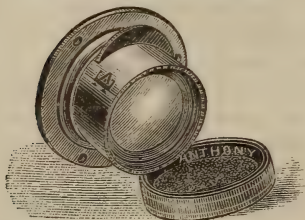
No. 1, for $\frac{1}{2}$	sized plates, \$0 25
2, " $\frac{1}{2}$ and 4 x 5,	" 30
3, " $4\frac{1}{2}$ x $6\frac{1}{2}$,	" 45
4, " 5 x 7 and 5 x 8,	" 75
5, " $6\frac{1}{2}$ x $8\frac{1}{2}$,	" 90
6, " 8 x 10,	" 1 40
7, " 10 x 12,	" 2 40
8, " 11 x 14,	" 3 20

The E. A. Compound Focussing Glass.



FOR fine work the E. A. compound focussing glass is the best. It has a double compound lens. The price is \$2 50.

The E. A. Wide Angle Lens.

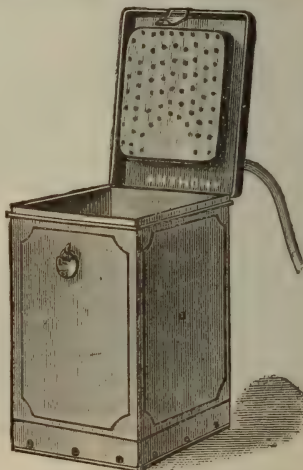


THIS lens being of short focus and of wide angle, and made on the rectilinear

principle, is a useful one for architectural photography, and is not equalled at the price by any in market. Those who cannot afford *the best*—the Dallmeyer—will find this an excellent substitute.

No. 2, 5 x 8, \$20 00 | No. 3, 8x10, \$25 00

The Anthony Self-Changing Shower Box.



PATENT APPLIED FOR.

THE Anthony self-changing shower box for washing dry plate negatives is a nicely constructed and convenient apparatus. Made substantially, and well japanned inside and out, it has interior grooves in which either 5 x 8 or 8 x 10 negatives may be placed. When the negatives are introduced, the hose is attached to a faucet; the lid is now closed and locked, if desired, and the water turned on.

It will be seen that the water enters the washer from above, and that the inside of the lid is made in the form of a perforated fountain, which discharges a spray over the plates. When the negatives are entirely submerged, the water is all drawn off by means of a self-acting syphon, and the process of showering is repeated.

With this apparatus the hypo. can be thoroughly eliminated from the gelatine film in from fifteen minutes to one hour. The change of water is continuous. Price, \$5 00.



ANTHONY'S PHOTOGRAPHIC BULLETIN

FOR JULY, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

Page, for a single issue,	\$15
Half page, " "	8
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Eighth page, " "	3
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Anthony's

Photographic Bulletin,

ILLUSTRATED

Terms for 1884: Two Dollars.

Unillustrated, One Dollar.

Payable in Advance,

And only to those who pay.

THE ETCHING PROCESS

FOR

*Relief and Intaglio Printing, Decoration
of China, etc.,*

BY GEO. G. ROCKWOOD.

ON a recent occasion I brought to the notice of the Photographic Section of the American Institute a process which I had introduced and practiced for the decoration of china or stone-ware by the aid of photography. The process as then outlined was as follows, and is taken from the report of the meeting:

"What is known as printed ware, formerly in common use, and now being reintroduced, was decorated by a process of 'offset,' so to speak, from impressions made from engraved copper plates. The design for a dinner set was first drawn by an artist and then engraved in intaglio on large copper plates, costing from six to a hundred guineas, depending of course upon the elaborateness of the design. When these copper plates were engraved, they were filled with a mineral pigment ink of any desired color for the design. Soft paper made for the purpose was pressed upon the plate, and the ink printed on the paper in the same manner as in ordinary copper-plate printing. These sheets were trimmed and cut into the desired forms and then ap-

plied to the ware while in the bisque or unglazed condition. The paper was then removed, leaving the picture or design upon the dish, after which the glaze was applied. It occurred to Mr. Rockwood that by reversing the action of photo engraving or etching process, these expensive plates could be produced by our art. Securing a 'line subject,' he first made a negative, and from it a positive on glass. He then coated a smooth sheet of zinc with bichromated albumen and exposed the plate under the positive. It was of course apparent that, when inked up, the parts unaffected by the light would be washed off by the water, and that the lines of the image would be bare instead of being covered as when printed with a negative. When etched the lines only were attacked, and they formed an image in *intaglio*, or below the surface, instead of being in relief. This plate, upon being filled with the pigmented ink, served the purpose in every way as well as the engraved plates. As zinc would not retain heat—a necessary condition in a stage of the printing—he tried the same experiment with a copper plate, and secured at a trifling expense very delicate designs which would have cost a large sum to engrave. He next exhibited a tea plate with a humorous design on it, and also the zinc plate from which the picture was printed, remarking that any gentleman desirous of experimenting in this line would be furnished further information, if desired, as he had no idea of patenting the process, if patentable."

In response to the invitation extended I received a large number of letters, the answers to which are herein given:

To cover the ground touched upon in this correspondence, it is necessary to explain the whole process of photo-etching on zinc or copper. I shall at first attempt to make plain the process for relief printing for press work, and then the *intaglio* or sunken lines for artistic decoration.

THE GLASS

Should be treated with nitric acid (and potash when using *old* glass) in the usual manner, but *not* albumenized, as the film

or negative in one stage of the process has to be stripped from the glass in order to obtain a reverse image. When the glass is perfectly clean and dry a solution of the finest talc or French chalk should be flowed upon the plate.

TALC SOLUTION

Is made of one ounce of talc and eight ounces of alcohol. This should be *gently* rubbed off with canton flannel; enough will remain to cause the film to leave the glass after the negative is made.

PRELIMINARY RUBBER COATING.

When prepared with talc, cover the edge of the glass to the width of a quarter of an inch with rubber solution made as follows:

Benzine, 8 ounces.
Rubber cement, $\frac{1}{2}$ ounce.

The cement may be obtained of the rubber companies at a cost of 25 cents a can. It readily dissolves in the benzine, and is best applied with a brush.

The glass being in order we next need a collodion which will give vigorous results. This is made as follows:

COLLODION FOR BLACK AND WHITE NEGATIVES.

Ether, 1 ounce.
Alcohol, 1 "
Iodide of ammonia, 5 grains.
Bromide cadmium, 1 grain.
Cotton, 7 grains to the ounce.

THE SILVER BATH

Must be 45 to 50 grains to the ounce of water, and strongly acid to test paper in five seconds—nitric acid, C. P.

THE DEVELOPER.

Protosulphate of iron, . . . 15 grains.
Water, 1 ounce.
Acetic acid, $1\frac{1}{2}$ ounces to 20 of solution.

THE EXPOSURE

Should be only long enough to bring out the fine lines—a rule always to be regarded—as they are the most difficult to preserve.

THE DEVELOPMENT

Should be stopped the instant the details are well up, and the plate cleared with a weak solution of cyanide of potassium, after which it must be *thoroughly* washed.

THE WASHING OF THE NEGATIVE

At this and all subsequent stages of the intensification is very important. There should not be a trace of the fixing solution remaining in the film when the next solution is applied.

THE BLEACHING is accomplished by a solution of—

Sulphate of copper, . . . 30 grains.
Bromide of potassium, . . 30 "
Water, 1 ounce.

It can be used as a dipping bath, but is generally poured on and off till the film becomes opalescent. Wash again and allow the water to cover the plate well. A "rose" or shower spout is best. Constantly *move the plate* till thoroughly washed. Then

BLACKEN

By pouring quickly over the entire plate a solution of—

Pure nitrate of silver (not bath), 30 grs.
Water, 1 oz.

Ordinarily the negative is sufficiently intense. If not, repeat the bleaching and blacking, (constantly looking after the *washing*.) If *thin*, the plate is probably under-exposed; if thick with tendency to closed lines the plate has been over-timed. If the lines are perfectly clear and more density is required in the whites, make a solution of hydrosulphuret of ammonia, 1 oz., and water, 1 oz., and flow over the plate. Wash again thoroughly. When dry flow with the rubber solution and let that also dry.

STRIPPING PLATES

When dry flow with collodion made as follows:

Alcohol, 10 ounces.
Ether, 10 "
Cotton, (10 grains to oz.) 180 grains.
Castor oil, (5 drops to oz.) 100 drops.

Let dry, which will take four or five hours if done spontaneously, *which is the best*. It can be hastened by heat. Then with a sharp knife cut around the edge of the plate inside of the india rubber safety edge, and set in a tray of slightly acidulated water. In a few moments the film will loosen. Gently take it by the corners and reverse it on another clean plate which has been placed in the water. When in place carefully lift the plate out of the water and squeegee it into perfect contact, removing all bubbles. When dry, which can be accelerated by heat, it is ready to print on the zinc for *relief* plates.

FOR INTAGLIO PLATES

The stripping can be omitted and reverse *positives* can be made in the camera by working *through* the negative. The positives should be made black and white, in the same manner as the negatives. Negatives from which positives are to be made need not be as intense as when they are to be used for printing upon the zinc.

To continue the process for relief printing we use the *reversed* negative which has been described

THE ZINC FOR ETCHING PURPOSES

May vary in thickness with the subjects to be reproduced. Coarse or outline subjects require deeper etching and thicker plates; fine, close subjects may of course be put upon thinner plates. The metal is now rolled by the manufacturer of the proper thickness and of any size that may be required. It is also sometimes obtained with such an excellent surface as to leave but little to be desired. In establishments where the process is worked commercially a planer is necessary, and powerful presses for bringing large sheets to a perfect plane. The experimenter will however find but little difficulty in getting small sheets with good surface and proper plane. Slight imperfections and inequalities may be removed with Scotch stone. A specially good charcoal may be had, which gives the plate an excellent polish. The zinc being prepared, it receives a "tooth" and an admirable sur-

face by a short preliminary etching in the acid bath.

THE SENSITIVE SURFACE

Is obtained by bichromated *albumen*. Either fresh eggs may be used or the dried albumen of commerce. We found the latter to work more uniformly in the various seasons. Where the latter is not at hand the former can be used in these proportions:

Albumen (free from yolk), . . . 4 ozs
Water, 1 oz.
Bichromate of potash, . . . 30 to 40 grs.

The dry albumen can be used as follows:

Dry albumen, 1 oz.
Water, 6 ozs.
Bichromate, as before.

Either solution should be carefully filtered through paper and a few drops of ammonia added. When not in use keep carefully corked and away from the light. It is best to prepare it frequently for use rather than retain the solution long on hand. Now secure some form of rotating disc upon which the zinc plate can be secured. We *inverted* a Yankee egg-beater, and upon the end adjusted a flat piece of wood in which were catches or buttons which held the zinc plate in its place and always horizontally. Carefully cover the zinc plate with the solution, drawing it to the corners with a piece of paper or a *clean* finger.

When completely covered, pour off into a different vessel to be filtered before use again. Now place the coated zinc plate upon the rotating table and begin slowly to revolve the plate; then increase the speed until the coating has by centrifugal force left but a thin even coating on the surface of the zinc. Remove the plate and with a gentle heat (from 100° to 120°) dry the surface. Too much heat destroys the film. So soon as dry let the plate cool to ordinary temperature, when it is exposed under the negative. The time of exposure must be ascertained by experiment, a clear open line negative printing very quickly.

THE PRINTING PRESS

Should be very strong, with four or five strong back strips which have powerful wood or metal hand screws running down to the back board of the printing press, by which perfect contact can be assured. It is needless to say that the front glass of the printing press should be very thick and of *plate* glass. Three quarters of an inch in thickness is about the right thing.

After the exposure, the plate should be rolled with a very thin but even coating of lithographic ink softened and worked down in oil of lavender. The ink is best applied with a fine lithographic roller, though small plates may be covered with a "proof" dabber, such as is used by engravers for inking their blocks.

THE DEVELOPMENT

Is quickly and easily accomplished in a pan of water—some prefer it slightly acid—and a soft tuft of cotton. By gently rubbing the surface, all of the zinc plate which has been protected from the action of light washes away, leaving the image in black lines upon a clean and bright surface. If the surface refuses to clear it would indicate over printing; if the lines wash away it signifies that the exposure has been too short.

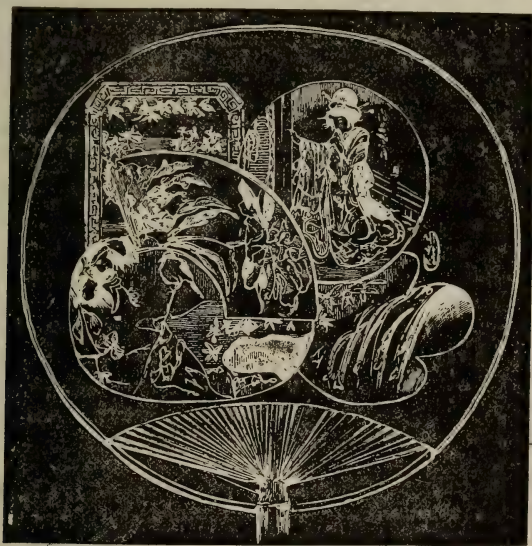
We now have an image on the zinc surface which is covered with a fatty ink and which will resist in a measure the action of the acid. If the subject is pretty close a brief etching may be given it in weak nitric acid.

THE ETCHING BATH

Is made of nitric acid 1 ounce, water 6 to 8 ounces. The strength of the acid varies with the subject and the progress of the work. Weak acid is used at first in all cases. If the subject is close and fine the etching solution should be kept weak, and the etching proceed slowly in order to keep the lines intact, and for the reason that such subjects do not require deep etching. In open subjects and coarse lines the work may progress more rapidly after the first etching. The lines would quickly be "cut under" if no other precaution was used to

preserve them. So, after the first etching, the plate is washed off in clean water and placed on a sheet of planed iron, under which is a series of Bunsen burners, and brought to a strong heat, and dried. It is now cooled to the temperature of 80° or 90° F, and placed in a tray containing finely powdered resin or dragon's-blood. This substance is gently brushed over the plate with soft, broad brushes. A small quantity adheres to the lines, when the plate is returned to the hot table and brought to such a temperature as will melt the gum employed. This operation of cooling and brushing the resin over the plate is often repeated by careful workmen three or four times before exposing the plate to the action of the etching bath. When the lines

have been thus covered, the plate is placed in the etching bath and the latter kept in constant motion by rocking. The baths are usually suspended on pivots or arms, in order to receive this rocking motion. This second etching goes quite rapidly with an increase in the quantity of acid. The image already stands out in strong relief, and if a copy of a steel engraving or other close, well covered design, the relief is sufficient. If not, and there are large patches of white with considerable open work, the heating and application of the protecting gum is repeated once or twice more. When the etching is complete a little turpentine will remove both the gum and the ink, and leave the plate clean and in order for printing, after blocking and routing. Before



etching at all, the back and edges of the zinc plate should be painted with a good thick coat of asphaltum varnish. This obviously will prevent the etching fluid from dissolving the zinc. The same material (asphaltum) can be used to cover such portions of the plate as may be fully etched, and a necessity still exists for further etching in other parts of the plate.

We have thus gone through with the *re-*

lief process. We will now briefly discuss the *intaglio* (or sunken line) plate, from which we get our "offsets" for decorative purposes. Going back to the negative we find that the film does not require to be stripped or reversed. After a good, strong black and white negative is secured, it is placed in a copying box *face outwards* and copied precisely as we would make a stereopticon slide or other transparency. This

gives a *reversed positive*. The same care should be taken to preserve the background clear and the lines opaque, as already suggested while making the stripping negative for the relief process. The after stages are precisely the same up to the point of etching. It will be seen that while in the relief process we had an image of black lines on a polished metal surface, we now have the reverse, the lines being white, clean metal against a black ground.

In almost all cases of engraved or intaglio plates, a *single etching*, and that a very brief one, is quite sufficient. Some use for this purpose, especially with copper, the perchloride of iron dissolved in strong alcohol—one part by weight of the former to two parts by measure of the latter—or perchloride of iron, 100 grams; alcohol, 200 grams.

To make the distinction clear as between *relief* and *intaglio* an example of the latter, used in the decoration of some china, is given above.

It is needless to recapitulate the directions or suggestions as to the application of the intaglio plates to the purposes of decoration of stone ware or porcelain. The expert in that line will need no suggestions.

ETCHING TRAYS.

As metal pans will not do for etching purposes, wooden trays should be made of the proper size and lined with—

Common brown resin, . . . $\frac{1}{2}$ pound.

Bees' wax, 2 ozs.

Melt these together in a tin pan; when quite fluid run the solution rapidly where required. The wood should be perfectly dry. If lumps appear, apply a hot smoothing iron to level them.

NOTE.—Since preparing the above, I find in the photographic journals a very interesting illustrated article by Mr. S. H. Horgan, entitled *Photography and the Newspapers*, in which he briefly describes various processes, and by diagrams shows admirably the various steps towards their production.—G. G. R.

Measurements in Landscape Photography.

BY G. R. BAKER.

EVERY lover of landscapes as depicted by the aid of photography must at times have felt how interesting it would be to have at the foot of the view, or somewhere convenient for reference, an account of the dimensions of the important objects included, as well as the distances of hills, mountains, and other natural objects that form the background of the picture. Most artists take care to have a man or some figure of a known height near the object to be specially brought out, so that the eye of the observer at first glance may form an idea of its proportions.

If by some simple apparatus the actual measurement, or a close approximation, can be readily obtained, I venture to think that a short time would be spared to each picture for the necessary observations. I propose, in the following remarks, to touch upon those instruments suitable for the purpose: 1. For showing inclinations and vertical heights. 2. Distances of objects in a direct line from the observer. 3. Horizontal angles, and the distance apart, of different objects. Under the first head will be considered instruments that show altitudes by means of atmospheric pressure, by instruments showing degrees out of plumb or level, and by reflection. Of those that show by the weight of the atmosphere the aneroid barometer is the only one that need be seriously considered, as its accuracy when well constructed is such that differences of ten feet of ascent or descent can be at once seen. It is portable and not likely by fair usage to get out of order; whereas it is quite an undertaking to carry about a mercurial barometer. The aneroid will be found a capital travelling companion, both as a weather glass and altitude instrument—heights of *accessible* places being taken by simply setting the zero of the altitude scale at starting, opposite the hand, which will fall or rise as you ascend or descend from the level, and show at sight the number of feet.

In hilly and mountainous scenery this is very interesting.

For inaccessible objects, or those hills that would require arduous climbing, a clinometer of some form is very useful, and generally the most available. These usually fold up so as to be portable, and have the sight separated as far as possible consistent with their construction, so that the eye may preserve a straight line when looking at the object. The lower portion of the hinged limb has a small spirit level inserted in it, so that the observer may see he holds it or places it on the camera stand correctly, and then while doing so he raises the upper portion of the limb until the cross sight intercepts the object. An arc shows the degrees of inclination, and there is a supplementary table showing the rise in inches per yard horizontal. It follows that if the distance between the observer and the object be known it is easy to find out the height. Example: 26 degrees = rise of eighteen inches in each yard. If the distance from the base of the object be thirty yards, the height will be $1\frac{1}{2} \times 320$ = forty-five feet.

Several convenient forms of clinometers are made—some as folding rules six inches long and some are square or circular boxes, nearly all having compasses attached so as to take horizontal angles, as explained hereafter. Of the clinometers those with pivoted compasses are the best, and for a clinometer compass the one in a flat, square mahogany box approved by the professors of the School of Mines is a really practical pocket companion, as it gives degrees of inclination, general slopes, rise in inches per yard, and degrees of magnetic bearing.

Regarding a reflecting instrument; the most portable is the box sextant; but, while it is a most useful instrument for surveying, it requires too much time for the purposes of photographers, as all the calculations have to be worked out by trigonometry, and in most cases an artificial horizon (of mercury or perfectly flat glass) must be used.

A very simple method of determining the height of an inaccessible object when no instruments are at hand is the following:

Fix a staff of a known length (one of the legs of the camera extended will do) in the ground facing the object (tree, spire, tower, mountain top, etc.) to be measured, retire until the top of the staff agrees with the top of the object, measure the distance between the staff and yourself and the object and yourself, and, as you know the height of the staff, it is only necessary to multiply it by this proportion of the two to get the height of the object. Example: Height of staff, five feet; distance from observer to staff, ten feet; and of observer to object, sixty feet. The proportion being one in six, it is only necessary to multiply the five feet less the height of the eye from the ground (say three feet when kneeling) by six feet to get the answer, the rise being two feet in every ten feet run. The distances should be paced twice, and the mean taken to ensure the approximate accuracy. This plan is often used by military men.

To Determine direct Distances from the Observer and also Distances Apart of Different Objects or Horizontal Angles.—An instrument of a very ingenious character has been designed by Major Poste, and carried out by Mr. J. H. Steward, optician, Strand, London, to enable an observation to be made quickly and give distances, *without any calculation whatever*. The advantage of this is that not only can different angles be found, but considerable time saved when measuring the height of an object by its inclination from the observer. It is of moderate size, occupying about the same space in its sling case as a full sized binocular glass, and, with the addition of sights, etc., suggested by the writer, it forms an admirable clinometer. All that is necessary to measure the distance of an object is to lay out a short base at right angles, and with the instrument to reflect the staff at the end of the base on the object. As soon as this is done the distance is shown by means of a cleverly calculated arm intersecting a curved line. Any length of base can be used, and distances of 8,000 yards readily taken. The base can be measured before or after the observation, and the instrument is provided with an optical square

so that a perfect right angle may be laid out and the assistant or staff (the camera stand will do) placed at the apex of the angle.

Supposing it is desired to know the distance apart of two inaccessible or distant objects, it is only necessary to measure the distance of each object from the observer. Take a proportionate part of that distance—say one-tenth or one-twentieth—and place staffs at these points in a line with each object. If the distance between these two staves be measured, and it is multiplied by ten or twenty, as the case may be (that is, the proportion used), the distance between the two objects will be found. The widths of rivers, mountain gorges, etc., can also be ascertained by this instrument, and for those observers who care to go scientifically into surveying they can do with it all the work of the box sextant.

There is one great point with the mechanical calculator attached to the macro-meter—that the divisions are units of the measurement employed: so it follows that, whatever the base is measured in, the distance will be given in that measurement. Yards, metres, chains, etc., can be employed at will. This instrument has been exhaustively tried by Her Majesty's Government and found very accurate. It has also been highly approved of by a number of engineers, surveyors, and military men. Being of strong make it is not likely to get out of order.

The photographer has at hand in his camera stand a capital rest for the instrument, and also, as explained, the means of making a staff to use when judging height or distances. I am aware that some gentlemen do take with them on their tours a pocket barometer, and here and there a clinometer; but I hope the above may be interesting, and at a future time useful, to a number of your readers.

To get Angular Distances.—The compass attached to the clinometers of the macrometer can be used. The easiest mode of fixing the relative position of objects is to show their compass bearings, and then from that find the observer's own position

on the ground. This can be done by taking bearings of two or more points and laying down the back bearings from those points. The point of intersection shows the spot of observation.

The compasses have check stops, so that the card or needle may be brought to rest and locked when the sighting vane intersects the object. The number of degrees shown by the compass for one object is subtracted from that of the other when the angle is registered.—*British Journal of Photography*.

"FOR the information of *The British Journal* and others," the *Eye* gives the following explanation of the pyro. and salicylic acid developer mentioned at one of the meetings by Mr. Edgeworth, and to which we recently alluded in this column. The solutions are composed as follows:

No. 1.

Pyro.,	1 ounce.
Water,	60 ounces.
Salicylic acid,	10 grains.

which must be dissolved in half an ounce of alcohol, as it is very difficult to dissolve in water.

No. 2.

Sulphite of soda—saturated solution.

No. 3.

Lewis' lye—half an ounce to 30 ounces of water.

To develop take equal parts of Nos. 2 and 3 and a few drops of a solution of bromide of potassium (twelve grains to the ounce) and mix, and of this solution take in the proportion of one ounce to one of No. 1.

But "Lewis' lye" is an "unknown quantity" here.—*British Journal of Photography*.

THE new E. A. Transparency Dry Plates have taken amateurs and professionals alike by storm. *They never fail and they never fog!*

On the Production of Lantern Transparencies.*

BY D. IRELAND, JR.

WITHIN the last few years the magic lantern, formerly regarded as a toy fit only for the amusement of children, has become a very important aid to education. At nearly every lecture on astronomy, physiology and the other sister sciences the lantern is called into request, and its utility in showing diagrams and pictures to large audiences is being widely taken advantage of.

The fearful colored daubs, formerly so much in request, have almost entirely vanished, and their place is filled by photographic transparencies. Until photography was employed for this purpose, the price of really artistic hand-painted slides was enormous; and this alone was quite enough to prevent the magic lantern coming into popular favor. Now, however, we can condense square miles of land, sky, and sea into the small compass of three square inches, and at the same time be perfectly certain that every detail—even the very smallest—will be rendered with a fidelity to nature which not even the greatest artist could equal, not to

say excel. Before entering into the details of my subject, I must ask your pardon for going into a few details which some of you may think unnecessary; but there are others who have not taken up the subject at all, and it is for them that these commonplace details are intended.

You are aware that there are two methods of producing slides—(1) by superposition or printing; and (2) by reduction. If the negatives are quarter-plate, or even 5 x 4, they will most easily be done by the first method; but all sizes above these will have to be reduced. Of course it is possible to take a little bit out of a large negative, but slides produced in this way are seldom in good perspective, as there is no foreground. To make slides by printing, therefore, the negative is put into a printing-frame, the sensitive plate placed face downwards on it, the frame closed, and the exposure made. For development the usual pyrogallic acid developer with sodic sulphite may be used; but, as there is always a difficulty in getting the high lights pure it is better to employ the ferrous oxalate developer. I find that the following proportions answer exceedingly well for transparencies:

Protosulphate of iron, . . . 1 ounce.
Water, 5 ounces.

1 part

} Oxalate of potassium, . . . 4 ounces.
} Bromide " . . . 20 grains.
} Water, 20 ounces.

to

4 parts.

After development the plate should be thoroughly washed and fixed in a fresh solution of hypo. After again washing a five minutes' immersion in the following solution has a great influence in rendering the film clear and brilliant:

Alum, 1 ounce.
Citric acid, $\frac{1}{4}$ "
Water, 8 ounces.

The plate is then washed in running water for five or six hours. If one of the usual makes of gelatine plates have been employed the transparency will generally be found to be of a cold, blue tone. The gold solution used for toning prints has not the slight-

est effect on gelatine plates, and I have found that treatment with mercury is the most suitable method of giving them an agreeable, warm color. An immersion in the following solution—

Bichloride of mercury, . . . 20 grains.
Chloride of ammonium, . . . 20 "
Water, 8 ounces.

followed by thorough washing and then treating with dilute ammonia, will improve the tone very considerably.

Of the usual make of gelatine plates the "Britannia" are perhaps as good as any. They are moderately quick and give very clear glass, but still they leave something to be desired. The dry collodion plates made by Messrs. W. W. Rouch & Co. gave sat-

* A communication to the Dundee and East of Scotland Photographic Association.

isfaction, their only drawback being that the shadows are far too heavy, and they were also expensive. quarter plates costing 4s. per dozen. They were developed with pyro. and ammonium carbonate; but they had also too cold a tone. It was only this year that a really suitable plate was brought into the market. I refer to Chapman's Manchester gelatine and albumen plates. These plates are very thinly coated with emulsion, so that there is no fear of hardness, and the albumen in them gives an agreeable, warm tone, very like the much-admired French slides which are produced by an albumen process. I find that an exposure of thirty seconds at three feet distance from an ordinary gas flame is generally sufficient; but this will, of course, vary with the quality of the negative. The ferrous oxalate developer is used, and the treatment is just the same as that given above. When these plates are treated with mercury and ammonia the tone is all that could be desired; and, though some contend that a plate intensified with mercury will fade, yet I have not found this to be the case.

With negatives the chance of fading would be serious indeed; but slides can be easily reproduced, and I should rather have "a thing of beauty" for a year or two than a thing of ugliness for ever. I think, however, that if the plates are thoroughly washed, both before and after intensification, there is little danger of this happening.

We shall now pass to the other method of producing slides, namely, by reduction. For this purpose a box is made having one end open; in the other a hole is cut to carry the negative. This having been inserted, the box is directed against the sky. It is very important that there be no object in the way, such as trees or houses, as they would show in the transparency. The camera having been adjusted to the proper distance, so as to get the image the right size, a small stop is inserted and the exposure given, the development being effected in the same manner as for printing. I may mention one point of the utmost importance, and that is how to get the sky clear. If there be the slightest deposit on the sky the

effect is marred except, of course, in the case of there being suitable clouds on the negative; but I prefer to do without clouds in most cases, as the illumination of the picture on the screen is greatly enhanced by a clear sky.

For the purpose of blocking out skies I employ a mixture of burnt sienna, glycerine, and water applied with a small brush to the back of the negative. Black varnish may also be used; but it is very difficult to remove, while the other mixture is easily taken off with water. A coating of varnish greatly helps to clear the picture, which should then be mounted with another thin piece of glass and edged with black paper.—*British Journal of Photography.*

The Gelatine Process. (*Extract.*)

BY WILLIAM BROOKS.

IN the early days of gelatine plates they were generally over-exposed; at the present time I may venture to say that many are spoiled by under-exposure. There has always been one weak point in the way of working gelatine plates, and that is, striving to bring them up with one development. I myself prefer to bring up the image, and not strive after density, and then intensify with pyro. and silver. By my method it is a very simple matter, very easy, and without the slightest risk. After the plate has been well washed from the hypo., place it in a weak solution of alum and citric acid solution.

Stock Solution.

Saturated solution of alum, 10 ounces.

Citric acid, 1 ounce.

For the solution above named I dilute one part to four of water, allow the plate to remain in it about five or six minutes; in the meantime place in a developing cup about (say for a small plate) two drams of the stock solution of alum and citric, and place in it about four grains of pyro.; when dissolved, add a few drops of about a twenty grain nitrate of silver solution. Take the plate out and apply same as intensifying a wet plate; as the pyro. changes color, the color will be imparted to the film, which is

of no consequence. When sufficient density is obtained, well wash, and place in the hypo. bath for a few minutes; well wash, and again place it in the alum and citric solution; dilute, to clear it. On examination, the character of sulphate will be found to have changed—it will have the appearance of an ordinary wet plate. The thinnest negative is amenable to this treatment. All this can be done in the daylight. It is best done before the negative has been allowed to dry.—*London Photo. News.*

In the *Deutsche Photographen Zeitung*, Herr Schlechter, of Carlsruhe, suggests a simple plan for obscuring the glass of the studio, which he has seen used by gardeners for keeping off the too bright light of the summer sun from the contents of their green-houses. He tried it on his glass-house and found that it answered very well. Some glass-houses, where the roof or sides require to be as transparent as they can be made in winter, yet require to be obscured at least during the height of summer; for this purpose many persons paste thin tissue paper upon the panes, and others get a house-painter to paint them. Herr Schlechter's plan is to pound down some chalk and mix it with milk to any desired consistency, and then apply the mixture with a large flat brush. One coat would last the whole summer and be extremely cheap. The idea is very good, and the present writer has seen something similar successfully carried out—only in this case the coat of obscuring mixture was applied outside the glass instead of inside, and consisted of buttermilk and whiting laid on with a white-washing brush—outside the glass roof of a factory. The reason why it was put outside was obviously to save the great expense of erecting the high scaffolding that would have been required had the inside of the glass been coated or had blinds been put up. There was the further advantage that no trouble had to be taken to remove the whiting, as the sun and rain had effectually removed it before the dark days of winter set in; but, of course, as the photographer

would need all the light he could get in winter he might give the weather a helping hand in the removal, with advantage as regards the appearance of his premises.—*British Journal of Photography.*

HERR NICKLE, of Chemnitz, has patented a licht-paus process in the German Empire. The process is intended to reproduce by licht-paus, in blue lines upon a white ground, any kind of a drawing by using the well-known licht-paus paper, which is sensitized by treatment with citrate of iron and ammonia and red prussiate of potash. The process is based upon the production of a negative copy of the drawing to be multiplied, by using as follows a special licht-paus fluid: Take some filtered gum arabic and mix it with acetic acid, in order to render it fluid and prevent it from spoiling; then add a little dissolved soap, in order that the lines drawn by this mixture may not be brittle when dry. Add Indian ink to this mixture until a drawing made with it is quite visible. Make a copy in the usual way, with this ink, of the drawing to be copied, drawing upon the rough side of the ordinary paper. Then with the finger rub upon the same side of the copy as much common, soft, black chalk as the paper will take on. The chalk had better be previously pulverized. When all that has been done the drawing is laid in water and then carefully rinsed. By this means the whole of the lines drawn with licht-paus ink dissolve out and disappear, leaving the drawing in sharp white lines upon a black ground. If this negative-copy is to be often used, it is recommended that it should be fixed by brushing it over with a broad hair-pencil dipped in spirit varnish, or by coating it with a solution of gum arabic to prevent the black chalk from spreading over the white lines. When such a negative has been made one may proceed to throw off an unlimited number of licht-paus pictures by means of the sensitive blue licht-paus paper, which gives blue lines on a white ground, by which a further carrying out of the licht-paus by means of colors is facilitated.—*British Journal of Photography.*

Observations Upon Fading.

BY JOHN SPILLER, F. C. S. *

So much has been said and written upon this subject, that it might be thought almost superfluous to attempt to throw new light upon such a worn-out topic; but the supreme importance of the matter, coupled with the fact that discussion has been reopened by the reading of a paper on "Old Photographs," by Mr. E. Dunmore, at the March meeting of the South London Society, must be my justification for once more returning to the subject.

The conditions of permanence are tolerably well understood by photographers, and, so far as regards silver prints, much more care is taken at every stage of their production than was formerly the case. By the liberal use of fresh hyposulphite, and subsequent removal of the excess of fixing salt by very thorough washing in water; the employment of alkaline, or at least well neutralized gold toning baths; silver sensitizing bath, not too weak; negatives not too thin; all are points to which attention must be paid, and, so far as my inquiries lead, are now generally observed.

The photographer having done his best, is now unhappily at the mercy of the paper maker, for he must needs mount his pictures in some sort of presentable form, and these perchance will find their way into portfolios or albums. What now, if after all the operator's care and trouble in the exclusion of every trace of hyposulphite from his finished print, he proceeds to mount it upon a cardboard impregnated with this very substance? Or if, careful himself about the card mount, his client thrusts it through the grooves of a mass of paper stuff in the shape of a common album, or puts it behind a heavy "cut mount" of doubtful constitution, with a view to its better preservation.

Sixteen years ago I pointed attention to the "Occurrence of the Hyposulphite in Mounting Cards," in an article written for the *Photographic News*, which this Society

did me the honor to reproduce in the *Photographic Journal* for May, 1868 (Vol. XIII., p. 54). It was there shown that cardboard was seldom or never free from hyposulphite, and a mild appeal was made to paper manufacturers to abstain from using this salt as "antichlor." Now that the subject of fading is again to the front, it seemed to me desirable to re-open this old question, and I have been testing cards and mounts, and making a heap of inquiries of the paper makers. My report, briefly stated is as follows: Hyposulphite still to be found in cards of recent make, and the practice of using this salt as antichlor generally admitted by the English paper makers.

Without mentioning names, I may say that the testimony is most conclusive as to its continued use; but I am not without hope that experiments now being tried on the large scale, on improved methods of manufacturing paper-pulp from wood, etc., by the bisulphite of magnesia process, will result in the introduction of a new system likely to be of considerable benefit to our craft. If this should succeed—and I hear favorable reports from several quarters—a revolution of manufacture will be brought about, and henceforth no antichlor necessary. At the recent *Soirée* of the Chemical Society (April 24th), Messrs. Cross & Bevan exhibited some samples of Ekmann's new paper-stuff, made by the disintegration of wood under great pressure, and boiling with the bisulphite solution; and these specimens certainly looked like the right article. On the same occasion Messrs. A. Boak & Co. of Stratford exhibited a large series of sulphites and bisulphites, as used by paper manufacturers. I am told that Ekmann's pulp can be mixed with an equal quantity of white rag pulp to make the finest paper, and that there is no necessity to employ hyposulphite. If this experience is confirmed, we are out of our difficulties. On the other hand, we know there has been of late a demand for extra thick mounting boards, which could only be supplied at a low or moderate cost by the use of very inferior materials, faced and backed with a better quality of paper. This, of course, offers no

* Read before the Photographic Society of Great Britain.

guarantee of permanence to the photographer, and the black or highly colored tablets are often the worst of all.

Tracing the history of this "Antichlor" proceeding, I find, on reference to the English patents, that in the year 1852 (Nov. 26) Thomas Ainsley Cook filed a petition for "Improvements in Bleaching," described as follows: In all bleaching operations where chlorine is employed it becomes necessary to take up or neutralize any chlorine that may be in excess. Now, my invention consists in the use of any of the following salts: Hyposulphite of lime, of soda, of ammonia, of potash, of magnesia, or of alumina, which I apply to the goods, after being treated with chlorine, when the hyposulphite used will neutralize any excess of chlorine that may remain in the material bleached."

Eighteen months later (A. D. 1854, May 9) Eden Norton Horsford took out a patent, No. 1,038, for "The Removal of chlorine from Substances and Fabrics." This invention "consists in neutralizing chlorine by means of the substance called 'antichloride of lime,' which may be prepared by passing the fumes of burning sulphur into milk of lime, contained in a suitable vessel, provided with agitators. The antichloride of lime, being collected on filters, may be dried and preserved for use. It may be applied by adding a small quantity directly to the pulp engine; or fabrics out of the 'chemic' may be passed through water slightly acidulated, containing in suspension a little of the antichloride."

Here, then, it will be seen that sulphurous acid was proposed to be used instead of the hyposulphite. On tracing back, however, to the earliest mention of the use of sulphites in paper-making, I find a prior claim in favor of John Donkin (A. D. 1846, Oct. 15, No. 11,417); and, as I shall presently show, it is a true misfortune for us that at this early date the manufacture of bisulphite of soda was not sufficiently perfected to allow of its general use as an antichlor, or we should have been spared many of our troubles during the last thirty years. The specification runs thus: "Improvements

in the Manufacture of Paper, or in the machinery employed therein, and in the process of bleaching paper, linen, and other manufactures in which chloride of lime is employed." By disclaimer (dated 1847, March 22) the title of this patent is altered to "Improvements in the Manufacture of Paper, and in the process of bleaching linen and other manufactures in which chloride of lime is employed." This invention consists in "the application of bisulphite of soda in solution to paper, pulp, linen, and other articles or materials which have been bleached by means of chloride of lime, so as to decompose and get rid of the chloride of lime which may be remaining mixed therewith or attached thereto." In practice the patentee has found that "about a pound of the saturated solution of bisulphite of soda is sufficient for decomposing the chloride of lime in the pulp obtained from a hundred-weight of rags, when the pulp has been well drained or pressed."

By all means, let the paper-stuff be well washed from the bleaching lime and other salts subsequently applied as antichlor; but in order to determine by actual experiment the relative effects of sodium sulphite and hyposulphite, if left inadvertently by the paper-maker, I took two photographs (silver prints), cut them in halves, and submitted them for equal periods of time to the action of these two solutions. The results (exhibited) show that sulphite of soda has no appreciable effect in 48 hours, whilst the other portions of the prints immersed in the hyposulphite are considerably bleached, or, as we should say, badly faded.

These striking differences are borne out again by another experiment which I then made. Clean a few sixpences or small silver coins, and put them into sulphite of soda solution, weak or strong, hot or cold, and leave them there for an hour. Pour off the top liquid, and test for silver by adding a drop of sulphite of ammonium. No trace will be found dissolved. Now try a similar experiment with the hyposulphite, using the same coins, and we shall soon find very distinct evidence of silver in the solution, showing that the metal has been attacked and

dissolved by the combined action of air and hyposulphite, forming the well known double salt of sweet taste.

With these facts before us, the fading of a silver photograph becomes perfectly intelligible, and the necessity for thorough washing, and careful exclusion of hyposulphite from the finished print, become at once apparent. I have described these results somewhat at length, because they furnish an answer to Mr. Dunmore's extraordinary statement, "fresh hyposulphite, even as strong as a 20 per cent. solution, applied to and left in the prints, and dried in the usual way, has no effect whatever on their permanence."*

Forced to indicate the cause of fading, the last-named author attributes the deleterious effects, wherever it arises from the mounts, to the presence of chlorine (excess of bleach) rather than to the hyposulphite. I have looked into this question also, and certainly find soluble chlorides in the cheaper sorts of cardboard, with plenty of sulphates and all kinds of mineral rubbish, but never met with *free chlorine* in the finished mounts. It would most likely be absorbed by the sizing, if traces only were left in the pulp.

Now, in the event of the paper makers accepting the suggestion to use sulphite instead of hyposulphite, how would this affect the iodide of starch test, upon which we have been accustomed to rely for the detection of the last-named ingredient? It is known that sulphite of soda will also quickly discharge the blue color of the starch compound. Thus far no difference. But we have a ready method of distinguishing between them, for the sulphite instantly discharges the color of weak magenta, whilst the hyposulphite has no such action. This, then, ought to be the paper-maker's guide as to the quantity he should add to the bleached pulp—so much as will neutralize the chlorine, and yet not discharge the color of highly diluted magenta. Messrs. Giles & Shearer have gone fully into the testing of sulphites in a recent communica-

tion to the Society of Chemical Industry, which was printed in their last month's *Journal*. They worked upon some very pure samples of crystallized sulphite of soda made by Messrs. A. Boak & Co., on a large manufacturing scale, which tested over 99 per cent. This proves that high qualities are now procurable, which was not the case when Donkin took out his patent.

Mr. Valentine Blanchard, in speaking of "The Finished Photograph,"* says: "In a conversation with Mr. England some little time ago on this subject [fading], we confirmed each other's experience that prints mounted on a lithographic tint were more permanent than prints on the ordinary board—the reason for this is not difficult to find. The thin layer of greasy ink keeps the photograph from contact with any deleterious matter in the board, and that such matter exists in a great many samples of pasteboards is only too well known to most of us."

The selection of tinted mounts in preference to pure white is always to be recommended, for then the paper-stuff need not be so highly bleached, and a further precaution is the final application to the photograph of an encaustic paste, which, by diminishing the hygroscopic qualities, helps to shut out the influence of moisture, always so detrimental to the permanence of a photograph exposed to our variable climate.

I have only to add that Dr. Hugo Müller informs me that in South Germany the makers have entirely given up the use of hyposulphite, and he says the same of North Britain. From another source, I learn that the paper-makers of Angoulême tried to do without it a few years ago, but have gone back to the old practice. Perhaps now the reduced cost will again offer encouragement to the use of sulphites; if so, the photographic community will be well content to hear that a fertile cause of fading has been banished forever.—*London Photo. News*.

A MONUMENT is to be erected to Poitevin, and some 1,500 francs are still needed.

* *Photographic News*, March 14th, p. 140.

* *Year-Book of Photography*, 1884, page 77.

Photographing *Pulex Irritans* and his Family.

BY J. H. JENNINGS.

PULEX IRRITANS, *alias* "F sharp," or
common flea, is a familiar insect even to

the most zealous worshipper of fresh air,
soap, and water. If the spider does not
scruple to hang her nets and pursue her
murderous trade in king's palaces, our lively
acquaintance will at times invade the
royal bed with equally bloodthirsty intent.



THE MALE FLEA.

Yet, unlike the spider, he takes no life; at the expense of his victims, cruelly regard-
he is merely a robber, who would fain live less of the terror and pain he inflicts.

Most persons know *P. irritans* merely through the qualities denoted by his specific name. His shape is so unfamiliar that many, on first seeing the photograph of a

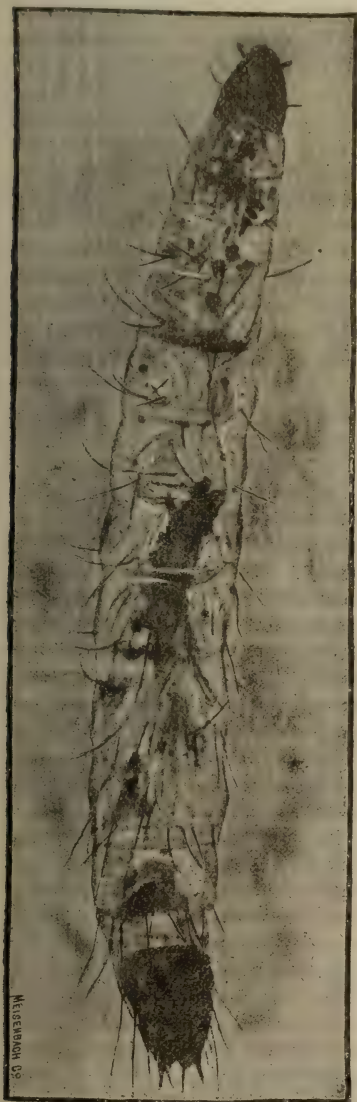
flea, are ignorant what insect it represents. This is partly due to the fact that the figures given, even in good works on natural history, are, for the most part, mere carica-



THE FEMALE FLEA.

tures of the real insect ; in fact in a certain optician's window, known to the writer, there is a hideous monstrosity in water col- or exhibited, with the inscription. " This is how a flea looks under one of A. B.'s 7s. 6d. microscopes ! " If it be a fact that

the flea *does* so look under one of the aforesaid microscopes, nothing much stronger could be said respecting their marvellous powers of distortion! *P. irritans*, instead



THE BABY FLEA.

fera, or "invisible wings," for although at present they fortunately have no wings, it was probably the fashion among the genus in former times to wear these appendages, which they have now parted with, like the folk who advertise grand pi nos at a sacrifice, through "having no further use for them."

The photographs of the "human flea"—for each species of beast and bird possesses a special flea reserved for its own private use—reproduced in this week's *News*, by the photographic process of Herr Meisenbach, show the male, female, and larva. The female is larger and stouter than the male, and, like most female insects, is endowed with a more potent weapon of attack. These lancets form part of the mouth apparatus, and require a good quarter-inch to show them properly. When not in use, they are carefully enclosed in a sheath.

As a "sitter," the flea is very unsatisfactory. The most obstreperous baby can't hold a candle to him, and the most rapid drop shutter isn't fast enough; so all we can do is to photograph his corpse. Even here we met with difficulties; instead of the "pallor of death," his dead body assumes when embalmed in balsam, a strong amber color, through which the actinic rays vainly strive to penetrate, unless aided by a powerful lamp and condenser.

The subjects of the illustration are from a slide by E. Wheeler, with male and female mounted under the same cover glass. Both are very perfect specimens, but, as is the case with all these insects, the legs are far more transparent than the body, which renders it impossible to give a suitable exposure to all parts; consequently, in the negative, when the body is fully exposed, the legs come out too dense. This defect has to be remedied in the printing, by the simple expedient of covering the body, when fully printed, with cotton-wool, and giving a longer exposure to the legs. The specimens from which the photographs were taken had an exposure of seven minutes with a rapid plate, one and a half inch lens, and small paraffine lamp. With a larger

of being a hideous looking monster, can really boast a neat, if not elegant figure.

The fleas belong to the order *Aphani-*

lamp, the exposure would probably have been reduced to two minutes.

If papa and mamma flea give trouble through their non-actinic color, baby flea is troublesome in just the contrary way. His body—or rather, the thin integument that forms his mortal remains—is so transparent that taking a decent photograph of it is a feat on which the photo-micrographer may congratulate himself. The best way of doing it is probably to put on a strong light, and give an almost “instantaneous” exposure, by rapidly uncapping and capping the lens. Few persons would recognize a flea in the infant or larval stage; it is, in fact, a mere caterpillar, as genuine a grub as any, but minus legs. The metamorphoses of the flea are briefly thus: The eggs—about twelve in number—are laid in blankets, carpets, rugs, old clothes, etc.; after a time they hatch, and become grubs, which feed on—well, no one knows exactly what! These grubs, or larvæ, become pupæ, which have the same form as the parent insect, but are enclosed in cases. After a proper period of, doubtless, meditative quiescence, the pupæ change into the perfect insect, ready to disturb the repose of all, from king to peasant.

The pictures given are enlarged about fifty diameters.—*London Photo. News.*

[From our Special London Correspondent.]

FOREIGN NOTES.

A Curious Copyright Question.—Herr Rudolf of Darmstadt has had a remarkable experience as regards the condition of the German law in relation to artistic copyright. It appears that the gentleman in question made some photographic pictures of a monument in the churchyard and sold copies; but he soon found himself defendant in an action at law brought against him by the owners of the monument, and damages were claimed for an infringement of their artistic copyright in the monument. The defence was that no copyright exists, or can exist, with respect to the reproduction of any public building or monument ex-

posed in a public place; a condition of things which appears to hold good in most if not in all countries. It was, however, contended that the churchyard ought not to be considered a public place, and that a copyright should exist as to the representation of a monument placed therein. Herr Rudolf, however, did not lose his case, as the court decided that the churchyard must be regarded as a public place; but the other side have given notice of appeal. It is difficult to see how any other view could be taken, as if the copyright now claimed in cemetery monuments were upheld, a person who had taken a general view, including a part of a churchyard, might be compelled either to sacrifice the whole of his picture or blot out certain portions at the instigation of crank-headed owners of monuments.

Photographic Charts of Coast Lines.—

The ordinary chart or map of a coast line, now used by mariners, has but little in common with the actual view of the shore as seen from the deck of a ship, and it requires the special skill of the sailor to translate the “plain” representation as given on the chart into the elevation and perspective view as one sees it from the ship. Indeed few who have travelled by water can have failed to notice the uselessness of coast charts or maps when in the hands of ordinary passengers or inexperienced persons. It appears that the Prussian naval authorities are now taking means to supply their ships with coast photographs, and as these show clearly to the eye the position of each variation in the height of the land surface, every large building of importance, and indeed a faithful representation which any person can recognize at a glance, it is probable that much advantage may be derived from this application of photography. Dr. Vogel gives some interesting particulars as to the arrangements for taking the photographs. As all will be taken from such a distance as to render focussing unnecessary, the camera employed is one without adjustments; in fact, it is merely a wedge-shaped box with the lens at the apex of the wedge and the dark slide at the base. A Stein-

heil aplanatic lens of about twenty inches focus is used, and the plates are sixteen inches long by four inches high. In order to keep the camera steady, and to prevent it tilting over with each oscillation of the vessel, a kind of gimbal arrangement is employed, and the kind of thing which has proved most satisfactory is a rod about four feet long, heavily loaded at the bottom and provided with a globular expansion at the top. This globular expansion works in a corresponding cup, perforated so as to allow the rod to pass through, and the camera is attached to the top of the rod. A small finder telescope attached to the top of the camera, and provided with cross wires, serves to show when the image of the required portion of the coast line will fall upon the sensitive plate.

It appears not to have been finally decided what kind of shutter is best to use, as several conditions have to be fulfilled. A very complex apparatus is undesirable, and moreover, there are objections to enclosing the arrangement altogether inside the camera, while outside shutters are liable to irregularities of action in consequence of the disturbing influence of wind and spray.

Intensification and Reduction of Gelatine Plates.—Dr. Eder calls attention to the value of a method of intensification which he described some eight years ago, and it depends on the fact that the silver in the film reacts with ferricyanide of potassium, forming ferrocyanide of silver and ferrocyanide of potassium; but as a persalt of iron is present during the action of the ferricyanide, a secondary reaction takes place and Prussian blue is formed by the action of the ferrocyanide and the persalt of iron. In order to prepare the intensifying fluid Dr. Eder directs that six parts of potassium ferricyanide and four parts of iron alum be dissolved in a sufficient quantity of water, and the well washed negatives are allowed to remain in this liquid until the required density is attained, after which they are once more washed. If an imperfectly washed negative is put into the intensifying liquid it becomes blue all over,

in consequence of the reducing action of the hyposulphite which is present. Dr. Eder says that this method of blue intensification is more delicate and satisfactory than mercury intensification, as the deep blue color allows sufficient light to pass to obviate that tendency towards over-hardness to which negatives intensified with mercury are especially liable.

The method of reducing negatives which appears to be altogether the most satisfactory is by the use of a fixing bath to which some of the ordinary oxalate developer has been added. Herr Martini uses two parts of the usual hyposulphite solution and one part of oxalate developer. The image of a dense negative is entirely dissolved by the mixture in the course of half a day.

A Simple Form of Electric Release for the Drop Shutter.—M. Mandit, in a communication to the French Photographic Society, describes a very simple and convenient form of a release for the drop shutter, when this acts through the centre of the lens mount, the electro-magnetic apparatus being attached to the tube of the lens. M. Mandit's account of the apparatus is thus translated in the *Photographic News*.

The arrangement (*fig. 1.*) is enclosed in a small cylinder of soft iron, nickel plated,

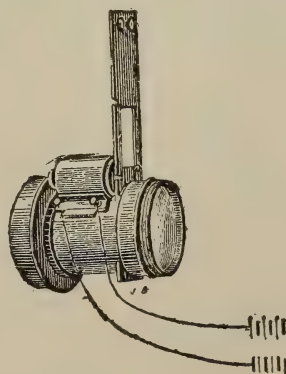


Fig. 1.

and fixed upon the objective just in the same way as the piston actuated by air pressure. The cylinder, C, as may be gathered from an examination of the section

shown by fig. 2, is merely an electro-magnet with concentric poles, exactly similar to that made use of by Mr. d'Arsonval in his ingenious telephone. One pole is in the middle of the helix, while the other occupies the whole of the circumference. The end plate, A A, is of course neutral. One terminal of the coil is soldered to the central work at a point (between B and A), while the other extremity is attached to an insulated binding screw, O. When a current

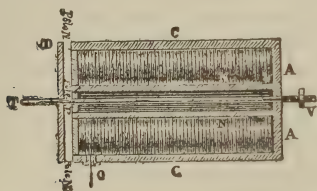


Fig. 2.

is passed, the iron becomes magnetized, the central cone becoming north, and the extremity of the outer tube becoming south, or *vice versa*, according to the direction of the winding, and the angle at which the current enters.

Through the central rod or core of the electro-magnet there passes a stem of brass marked T on the diagram, care being taken that this rod can move quite freely. Near one extremity of this is attached a disc of soft iron, D, while the other end is furnished with a regulating screw, which renders it easy to adjust the distance of the movable disc from the magnetic poles.

When the magnetization of the iron takes place, a consequence of the passing of an electric current through the wire, the projecting end of the brass rod (which should previously have been so placed as to support the steel drop) is withdrawn, and the exposure takes place.

The Turin Exhibition and Exhibitions to be Held During 1885.—As regards matters of photographic interest this exhibition may be considered a failure, although in other respects it is a decided success. The photographic department is difficult to find, and when found there is but little of interest. It is, however, expected that photog-

raphy will be very well represented at the two international exhibitions to be held during 1885. One of them is to take place at Antwerp, and will open in the spring, to continue during the summer; the other will be at South Kensington, from May to September. The *Chambre Syndicale* of Paris is taking active steps to induce French photographers to send exhibits to Antwerp; and the London Exhibition is to have a section devoted exclusively to photography. As the London Exhibition is confined to inventions, apparatus, appliances, processes, and products, invented or brought into use since 1862, it will be understood that pictures will not be admissible, except as illustrations of processes; but since almost the whole science of modern photography has grown up since 1862, it is evident that the limits of the Exhibition will not press hardly upon photographers.

The following are the items from the official classification referring directly to photographic work, although photographic appliances may also come in under the heading of military equipments and also in connection with printing processes.

Photographic Processes and their Results.

—Methods of gelatino-bromide plate making, apparatus for making emulsion, apparatus for separating the sensitive constituent, coating, drying, and packing machines; emulsion and other processes; printing processes, silver, carbon, Woodburytype, platinotype, gelatino-bromide collodio chloride of silver, etc.; apparatus for washing, etc.; prints and negatives; methods for making photographic lantern slides.

Apparatus (excluding lenses).—Cameras, shutters, changing boxes, slides, tents, lamps, apparatus for making enlargements, and for micro-photography.

Application of Photography to various purposes, Typography, Ceramics, Relief-moulds, etc.—Method of producing printing surfaces; photographic enamels, photographic printing on pottery; photographic reliefs. Use of photography in self-recording apparatus, in scientific observations, etc.

Optical—Lenses, prisms, telescopes, microscopes and accessories, spectroscopes,

polariscopes, stereoscopes, photographic lenses, spectacles, eye-glasses, optical glass.

No charge will be made for space, but exhibitors will have to pay every expense of transit, delivery, fixing and removing their exhibits, and erection of counters when required; and they must, either personally or by their agents, superintend the dispatch, transmission, reception, unpacking and installation, and at the close of the exhibition the removal of their goods; in default thereof the Executive Council reserves to itself the right of doing whatever may be considered necessary, and at the expense of the exhibitor. Should any goods be deposited in the exhibition premises during the absence of the exhibitor or his agent, the Executive Council will not be responsible for any loss or damage, from whatsoever cause arising.

Applications to exhibit must be made on printed forms, which will be supplied on application to the Secretary, International Inventions Exhibition, South Kensington, S. W.; these must be filled up and returned on or before the 15th September, 1884. After this date no application will be received.

Ready Sensitized Paper.—The *Photographic News* speaks well of a suggestion made by Captain Abney to use nitrate of potassium as a preservative for sensitive albumenized paper, and the following extracts from the remarks made should be of interest to your readers.

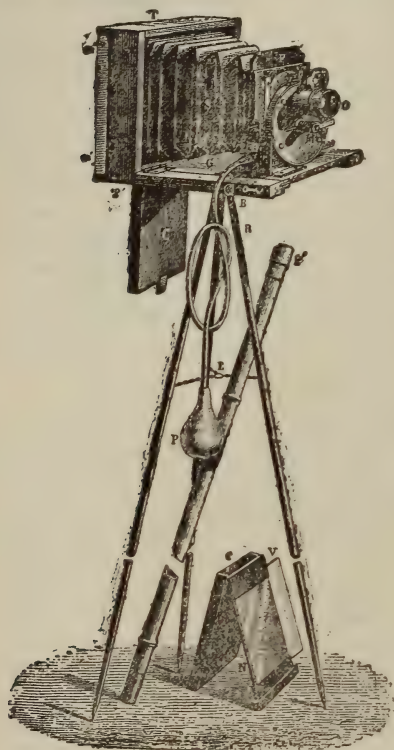
We have tried the plan with potassium nitrite, and have but one objection to it—namely, its hygroscopic tendency and its consequent passage into potassium nitrate, a salt which is absolutely harmless, but not possessing the chlorine absorbing properties that are necessary. We may say, however, if the paper be once thoroughly dried and then one sheet kept face to face with another, that atmospheric moisture hardly affects it, as the paper remains nearly colorless, and the nitrite seems not to be affected in the albumen itself, presumably because the albumen surface is more or less impervious to moisture. We have toned prints taken on this paper four months after

preparation, using the borax bath and the acetate bath with good results. These prints we have before us now are vigorous, and of a good dark sepia tone. We have tried other preservatives besides nitrite, and with fair success—for instance, the sulphite of soda gives excellent results, and is not of the same hygroscopic nature as the nitrite. We have found that the acid sulphite is, perhaps, a better preservative than the neutral sulphite, for reasons which it is not far to seek. The toning of the prints taken on this paper is fairly satisfactory, and we would recommend that it be tried.

A Tourist Apparatus.—M. Leon Vidal, of Paris, has designed a tourist's outfit which presents some points of novelty, and he thus describes it in the *Photographic News*.

The bellows camera, when closed, measures only 9 by 10 by 3·7 centimeters, and weighs 280 grams. In front, on a slide running in grooves, F, is placed the rectilinear lens set in action by its instantaneous shutter. It is a circular shutter in the same place as the diaphragms, and set in motion pneumatically at D without causing vibration. The slide bearing the lens may be moved backwards and forwards by a rack. The back of the camera opens for the insertion of the dark slide, shown in diagram at C, with the inner part removed. The dark slide holds two plates, kept apart by the partition with spring. Pellicles and sensitive paper may also be used, placing them behind a clean glass so as to keep them in a state of tension. Each dark slide, containing two plates, weighs 48 grams; six, therefore, when filled would be from 288 to 300 grams in weight with the case. The dimensions of each dark box are 10 by 7 by 0·6 centimeters. The slide is drawn out underneath at C, so as to avoid the introduction of light. The stand is made of three tubes of brass, one fitting into the other. Three sockets connected by chains to a central ring permit of the stand being placed so as to give tension to the legs. The whole is enclosed in a cane, like a stout walking-stick, the top, P, unscrewing to admit the three branches. At *m m'* is a brass rule fixed on a pivot *m*, taking a hori-

zontal position, having a projecting knob at each extremity, serving as points of sight by which the objects may be centred on the plate without using ground glass. A little handle replaces the stand for rapid exposures in the hand, as with a pistol. In such



cases, the apparatus is, held in one hand, the eye adjusts the picture in the centre by the two sights, and the other hand works the shutter by pressing the pneumatic pear, P. To sum it all up, three little parcels are put into one's pocket; the first is the camera, next the collection of six double dark boxes, and the third is the lens with shutter and diaphragms complete. This last in its case weighs 235 grams. With the walking-stick in the hand is completed the photographic outfit, sufficiently reduced in volume and weight so as to be easily carried in the overcoat or coat pockets. Compared with all other apparatus of the kind, I think this is the most complete in point

of portability, as well as the dimensions of results obtained—namely, $6\frac{1}{2}$ by 6 centimeters. The question of solidity has not been overlooked, and the thickness of the wood and stoutness of finish render it not a mere toy, but a really accurate instrument. The lens is a double rectilinear, 10 centimeters focal distance giving sharp definition instantaneously of images 6 by 6 without any diaphragm, although having an opening of 12 millimeters. The shutter is a double palette, turning on a central pivot, M, where a steel spring bends it more or less. When the little crank, M, is vertical, the lens is exposed; when horizontal on the side opposite to that shown in the diagram, the lens is covered and ready to act. The exposure is as long as possible, as the one palette describes a semi-circle before that masking the lens exposes it to the light. This is equivalent to a circular shutter, the disc of which would have an opening equal to half the circumference.

A Mucilaginous Size for Collodio-chloride Prints.—Dr. Liesegang finds that a mucilage made from the seeds of the *plantago psyllium* answers extremely well as a protective coating for collodio-chloride pictures, and he gives the following particulars:

A convenient quantity of the seeds is covered with ten or twelve times its volume of cold water, and after macerating for a day, with occasional stirring, the liquid extract is filtered, a small quantity of methylated spirits being now added. Those who prefer to mount the prints when dry, may add a little glycerine. After washing, the prints are soaked in this fluid for a few minutes and dried.

Even prints made on paper prepared with soluble gelatine may, after this bath, be treated like ordinary albumen prints without the collodion film cracking.

If it is desired to give the prints a coating of varnish, I find a solution of one pound of copal in two pounds of linseed oil gives a splendid and most resisting covering if applied by a pad of cotton or a brush.

Many species of *plantago* give a simila

mucilage, the commonest being the *planta major*, or broad leaved plantain, which is, I believe, met with abundantly in the United States.

The Lime Light Explosion at Drury Lane Theatre—The explosion alluded to in my last letter has terminated fatally, one of the injured men having died. The accident was proved to have arisen from the careless mixing of the gases, the bags having been so indistinctly marked as to call forth an expression of blame from the jury, and indeed they expressed dissatisfaction with the whole arrangements, and added to the verdict a note to the effect that incom-

petent men had been employed to make arrangements for the lime light operations.

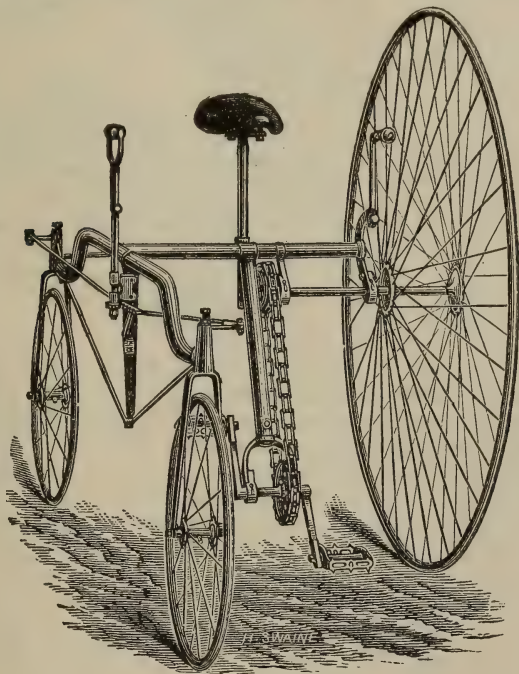
A New Cork.—The subjoined cut of Mr. Kingzett's new cork will almost explain itself.

One end is grooved so that when the cork is reversed a convenient dropping arrangement is obtained. If made of india rubber it should be very durable and useful for many photographic solutions. However, it does not seem likely that Mr. Kingzett will make a fortune by the sale of it, as each person can convert an ordinary cork into the patent form for himself.

More About the Tricycle for Photogra-



RUBBER CORK.



phers.—I have already told your readers about the excellent use which may be made of the tricycle by the photographer when out "viewing," and every day one hears of fresh cases in which well known photographers have adopted it. The machine preferred is the same I recommended in my previous letter, the "Coventry rotary;" and I see that in the May number of the

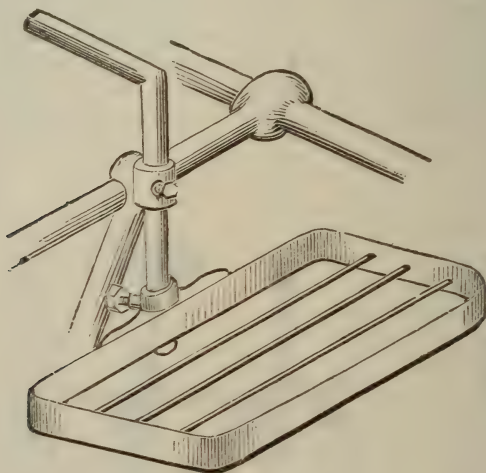
BULLETIN you have an article by Mr. C. G. Cutchery in which he speaks highly of the tricycle in question.

It is represented by the subjoined diagram, and although all the driving is done through the large wheel on the left-hand side, it is one of the steadiest machines in the market, and has no tendency to swing round even under the most trying circum-

stances, the long bar between the steering wheels serving to keep it well under command and to give stability. An excellent form of luggage carrier is alluded to by Mr. J. B. B. Wellington. In an article which he contributes to the *Photographic News*, Mr. Wellington says:

I will just give a brief outline how to carry the camera and stand, and this latter need not of necessity be a folding one. It

should be strapped to the long bar which connects the two steering wheels, and is then quite out of the way. Now for the heavier part of the kit. I have a carrier made of a light iron framework, and which can be purchased from Messrs. Starley & Co., manufacturers of the "Salvo" Tricycle. I think the price is 3s. 6d. This should be fixed as shown on the lower part of the 7 pin, which supports the saddle, as



it is then easily taken off when not required. Below the carrier I strap on a basket containing a change of clothes, as well as a supply of plates; and on top the camera is placed and fastened by two large straps, which go round the basket below, also round the cross-piece of the framework, thus preventing the liability of the carrier giving way. On account of the "give" in this carrier, the vibration communicated to the camera and plates is reduced to a minimum, thereby preventing dust from shaking off the interior of the dark slide and settling on the sensitive film.

I usually carry one dozen half plates besides the four double dark slides ready charged, for a two or three days' tour; but if on a tour of a week or fortnight's duration, the best way is to send a parcel of plates on by train to a place which you intend reaching in two days' time, as enough will be taken "on board," as suggested

above, to last during the time the rest are in transit, so that no anxiety need be felt about their getting to their destination in time. They certainly should be labelled "Photographic Plates—not to be opened;" otherwise the vigilant railway authorities—just at present, at least—may, from their heavy nature, take them to be dynamite.

Our Illustration.

OUR illustrations for the month are from a series of river and harbor views in the vicinity of this city by Mr. Theo. Gubelman. The negatives were made on Eastman Special dry plates and the prints by Mr. G. on N. P. A. Brilliant Pensé Albumen Paper. Regarding their quality, it is quite unnecessary to say a single word, for they are not only very excellent photographs, but beautiful pictures also.

Dr. Lohse's Isochromatic Plates Prepared With Turmeric Extract.

As much interest now centers around the various methods of obtaining justly graduated negatives from highly-colored originals, such as paintings, we are pleased to be able to lay before our readers the working details of Professor Lohse's method of treating gelatine plates with turmeric extract.

Dr. Lohse writes: "The method of treating gelatine plates with turmeric extract, in order to make them sensitive to the yellow and the green, is as follows: Bruised turmeric root is extracted with alcohol, and of the strong alcoholic extract ten cubic centimeters are added to one hundred cubic centimeters of water containing ten per cent. of strong ammonia. In this fluid the gelatine plates are immersed for two minutes and dried. Such plates when exposed to the solar spectrum do not give



such a notable maximum in the yellow as is the case with eosine plates, but notwithstanding this, the sensitiveness for green and yellow is so far exalted that you are in a position to satisfactorily reproduce the whole spectrum from the yellow to the ultra violet."

In the above directions, Professor Lohse does not exactly specify the alcoholic extract which should be used, but we have found that a satisfactory preparation may be made in the following manner. Four ounces of turmeric root are thoroughly bruised so as to isolate all the larger fibers of the roots from one another, and the material is carefully packed into the funnel of

the simple filtering or percolating arrangement referred to by Captain Abney in his "Instructions;" but instead of using a cone of platinum foil as one would when employing the apparatus for an ordinary filtration through a paper filter, a piece of fine platinum gauze was rolled up into a cone, and placed in the funnel as shown, in order to prevent the turmeric falling through into the receiving flask. Four fluid ounces of alcohol were now poured on the surface of the turmeric root, and after this had percolated through into the flask, another quantity of four ounces was similarly poured on, a third batch of four ounces being used in order to displace what alcoholic extract was retained by the porous root. When all had drained through that would come, the alcoholic extract in the receiver was found to measure almost exactly eight ounces, and if the packing of the turmeric root in the funnel is carefully performed, one may depend on the extraction of the bulk of the coloring matter; so the extract may be considered as representing about half its quantity of turmeric root. It was not found necessary to create a partial vacuum in the flask by connecting the outlet tube with an exhausting syringe; indeed, it would probably have been disadvantageous to have done this, as then sufficient time might not have been allowed for the thorough extraction of the coloring matter. It is, perhaps, scarcely necessary to say, that during the percolation of the alcohol the top of the funnel should be covered by a glass plate, as if this be not done, not only may a considerable amount of the alcohol be lost by evaporation, but the remainder is likely to be weakened by absorption of moisture from the atmosphere.

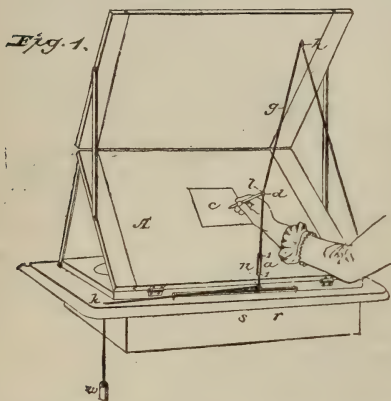
Anyone can try Dr. Lohse's method, and we shall be glad to be informed as to the result of such trials as our readers may make.—*London Photo. News.*

H. A. HYATT, of St. Louis, announces an excursion to leave St. Louis on Monday evening the 28th. Fare for the round trip to and from Cincinnati, \$13 35.

Densmore's Machine for Retouching Photograph Negatives.

[PATENTED DEC. 18, 1883.]

THIS machine puts it in the power of any one who understands a negative to retouch it. The stroke of the pencil is produced automatically, and the motion by a cord



which connects it with suitable mechanism. The stroke is readily adjustable from an infinitesimal degree of fineness to any extent required, by simply sliding the end of the cord along the vibrating wire at the side of the easel. Having adjusted this to obtain



a suitable touch, and regulated the rapidity of the strokes by the motion of the foot, the operator guides the pencil over those parts of the negative he wishes retouched. Experienced retouchers may also employ it

with advantage, both on account of the fineness of execution and the rapidity of work. The machine makes the same motion of the pencil that the hand does, but with much greater uniformity, speed, fineness and delicacy than it is possible to do by hand.

The machine runs very easily, is simple and practical in principle and is strongly and durably constructed. When not in use it may be closed up without removing the negative, making an ornamental piece of gallery furniture. The easel is made so as to accommodate a negative of any size up to 14 x 17.

The following is the report from a sample machine sent to New York City for trial by experts :

"591 BROADWAY, N. Y., March 26, 1884.

DEAR SIR :

We sent the retouching machine to one of our most reliable photographers, who speaks well of it, and says it is especially good for large heads. What will you take for the machine you sent as a sample ?

Truly yours,

E. & H. T. ANTHONY & Co.

LOUISVILLE, KY., May 19, 1884.

A practical retoucher can do about twice the work with the Densmore retouching machine than he can without it. The machine gives me unquestioned satisfaction.

E KLAUBER.

TEXARKANA, ARK.

I am proud of the retouching machine, and would not take four times its cost if I could not get another.

WOODWARD WRIGHT.

Price \$25 00, boxed ready for shipment.

E. & H. T. ANTHONY & Co.,

Sole Eastern Agents.

MESSRS. CROSSCUP & WEST have favored us with some examples of relief plate printing by the Ives process. For washed drawings, the process serves admirably, but for use in connection with a reproduction of line work there still seems something lacking.

Eosine Silver.*

BY V. SCHUMANN.

PROF. H. W. VOGEL found that an eosine solution, mixed with a nitrate of silver solution, would give a red deposit of eosine silver, which dissolves easily in ammonia. This silver deposit proved to be in several cases a sensitive body, which, with bromide and iodide of silver would not only increase the sensitiveness of photographic plates for yellow and yellow-green, but gave also by itself a developable picture. This was too interesting to be left unnoticed. I tried to bring the eosine silver into the gelatine plate and succeeded in doing so simply by mixing the nitrate of silver solution with a few drops of the eosine solution and then precipitating the silver in the bromized gelatine. The emulsion was then cooked for about 20 minutes, a plate flowed, then washed in running water for about half an hour, and while wet exposed in the quartz spectrograph by magnesium light.

The action began with D, and with the exception of the well known minimum of the eosine-bromide-gelatine at F, the spectrum went with almost equal intensity through the whole visible spectrum, and ended, diminishing gradually far in the ultra violet. The sensitiveness to yellow-green equalled about that to indigo, and the minimum at F not so extended, as with most of my former eosine bromide plates. But the plate had one fault, it was red-brown, and this color disappeared neither in the fixing bath nor during washing; even prolonged immersion in very diluted ammonia had no effect.

The pressed and washed gelatine showed another condition. The yellow sensitiveness had diminished and the minimum had increased; the reddish color was only very sparingly left. According to this it seems as if the yellow sensitizer had changed, or had been reduced during washing.

To discover the cause of this decrease of sensitiveness, I removed from a concentrated aqueous solution of eosine all the

eosine by means of a strong nitrate of silver solution, until a surplus of the latter was obtained. The filter containing the eosine silver showed some time after washing the strong red color of the filtrate. A sample of this deposit showed that it had lost its insolubility in water; after some shaking it dissolved completely, and did not appear again until a few drops of nitrate of silver had been added. It seems, therefore, as if the insoluble eosine silver exists only in presence of an excess of nitrate of silver.

The reduction of the yellow sensitiveness of my eosine bromide of gelatine results presumably from this peculiarity of the eosine silver by repeated washing. A reason for the partial disappearance of the sensitiveness to yellow and yellow-green by washing may be, that the gelatine holds a good many salts, and that otherwise astonishingly small quantities of eosine are sufficient to make gelatine plates sensitive to yellow.

A wet plate of the same emulsion immersed in a dilute solution of eosine silver in water and exposed wet, gave a thin spectrum picture and did not have the expected result. A dry plate, or one half of the same immersed in the same solution and then exposed in a manner so that the magnesium spectrum would fall one half upon dry and the other half upon wet emulsion, gave better results. The sensitizing influence of the aqueous eosine silver was considerably visible in the yellow-green.

The eosine silver precipitate dissolves, as demonstrated by Vogel, easily in ammonia. This solution seems to have a stronger fluorescence than that of the pure eosine. Fixing soda also dissolves the eosine silver easily, and the carmine-like color changes more to that of the pure eosine solution. Bromide of potassium is without any effect in the beginning; only gradually a precipitate of bromide of silver will occur.

If the absorption spectra of the eosine solution and the eosine bromide of gelatine plates are compared, it will be found, as well known, that the absorption bands of both do not come together. The yellow

* Translated from *Photographische Wochenblatt* by H. D.

maximum of the plate lies nearer to D (Frauenhofer line) than the dark band of the eosine solution. To find out the spectral condition of the eosine in water and in gelatine, I produced evenly colored solutions of both, and examined the same with Vogel's small universal spectral apparatus of Schmidt & Haensch in Berlin. The dark band of the eosine gelatine lay inclined further towards red than that of the other solution, and the difference I could easily determine with the micro-spectroscope of Carl Zeiss. This instrument, considerably improved lately, possesses an adjustable scale, from which the situation of the absorption band can be read without trouble. While the dark band of the eosine ended at $\kappa = 525$ in water the other went to $\kappa = 535$. In the same condition were the solutions of eosine silver in water and gelatine. The absorption band of the latter was likewise nearer to the red end of the spectrum than that of the former.

A trial to determine the absorption spectrum of the solid eosine silver was without success. If the eosine silver is put upon a glass plate it will give, when evenly spread, a *thin* film with an even coating of color like carmine-blue; in a *thick* film, after drying, a transparent grayish black color, resembling not in the least the thin coating of the eosine. A stronger enlargement only enabled me to obtain some information about the absorption of the thicker eosine silver coating. In the whole spectrum a somewhat *lighter* band marked itself in red, going with diffused edges from $\kappa = 640$ to 660; otherwise very weak absorption, being only a little more powerful from $\kappa = 660$ to 630. The same difference of the eosine silver regarding color was therefore also in the spectral light, according to the penetration of rays through a thicker or thinner film. The handsome red of the lighter film absorbed the rays commencing from D in yellow and yellow-green, while the cyanide-blue part of the spectrum was less influenced. The absorption was remarkably strong, and as far as I could find out, stronger than with pure eosine in a dry state.

Isochromatic Plates.

For some time photographic copies of oil paintings have been found in the sales-rooms of picture dealers, reproducing the gradation of color effects very faithfully. They come from the well known establishment of Dr. Eugene Albert in Munich, who has succeeded in reproducing the tone effects of *all* colors—not only those of yellow and blue—with that clearness as represented to the eye in photographic half tones.

About the process, applied by this gentleman for over two years, nothing more is known than that the excellence of the results is without doubt. Comparing a negative with one taken from the same color table after a former process is just surprising, and one could be taken for a diapositive from the other; but it can be seen very readily that light blue, dark blue and violet, looking almost alike in the old method, appear light, medium and dark with the new process, and the green and yellow, appearing equally dark before, showing now lighter and darker.

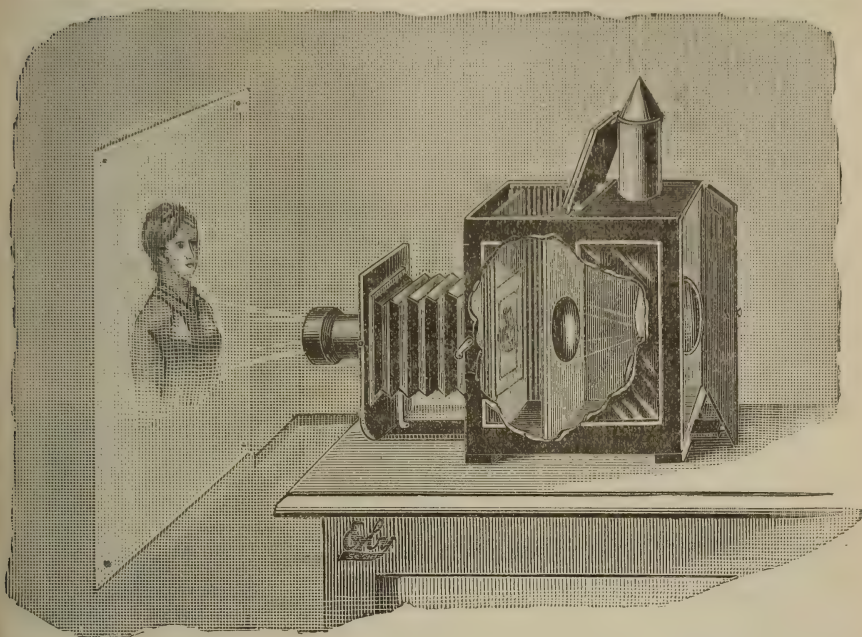
The use of yellow glass Mr. Albert does not approve of at all. To learn the influence of the yellow glass the following simple experiment may be made. With yellow and blue oil color a few stripes are painted upon a glass plate, and from this a print is made upon chloride of silver paper, once under a white light and once under a yellow glass. While in the first print the blue copies darken before the yellow shows any action of light, the result is the reverse under the yellow glass, the paper coloring quicker under yellow than under blue, and consequently a longer exposure is necessary.

Anthony's New Transparency Dry Plates.

THESE excellent plates astonish the people, especially those who have hitherto been troubled with all sorts of imperfections in working with other makes.

Anthony's never fail and never fog.

* Translated from *Photographisches Archiv* by H. D.



Anthony's Enlarging Camera.

OUR esteemed contemporary entitled *Photography* (published in Chicago) in its fifth number, page 103, kindly gives our Enlarging Camera gratuitous advertisement to the extent of half a page or more. Briefly stated "the merits and defects of this apparatus"—if not the criticism—"may be summed up in the one word—cheapness."

So far so good; but "the arrangement is compact and convenient, the bellows attachment connecting the object lens with the (box) proper, being one of its best features, while the internal grooves and slides for condenser and negative enable the proper adjustments to be made with facility, and the whole arrangement is light-tight when closed. The only object in having the condenser and negative relatively adjustable is to provide for different sizes of negatives, and practically it is of service only in copying vignette heads, which are liable to be of various sizes. Of course they could all be copied by placing them

close to the condenser, but with a small head this would necessitate longer exposure than when set a little way from it.

"But the radical defect of the whole arrangement consists in using a single, instead of a double condenser, (why not buy two, then?) We readily admit that it would be impossible to supply a pair of 5-inch condensers and still sell at the present price of the apparatus, at the same time allowing a fair profit to manufacturer and dealer." The editor then goes on to say, "but we fear this enlarging camera . . . will tend to disgust everyone who uses it, BECAUSE many photographers have not sufficient optical knowledge to understand when their failures are due to the appliances in use, and when to their own want of experience or to the chemicals." Rather hard on the photos, if not on the (box). But we are considerably advised to line it with metal and substitute another form of oil lamp, etc., all of which is duly taken note of.

As to these defects. If the camera were lined with metal, supplied with two con-

densers instead of one, and also provided with one of Dallmeyer's unapproachable portrait lenses, it would undoubtedly be improved, but the cost would be so much increased that a majority of the photographers would be debarred from getting one. As to the heat, anybody ought to know that the top can be lifted and the back door opened as soon as the operation of enlarging (which does not require more than a minute or two) has been concluded.

In the meantime we gratefully thank our contemporary for speaking so generously of its *merits*, and entrust him to reconsider the deplorable "defects" he believes to have discovered.

Seaside Notes.

COTTAGE CITY, MASS., July, 1884.

DEAR BULLETIN. Why not a brief seaside epistle, as an agreeable variation of the annual programme of scientific reading and research.

Though away from the art studios and laboratories of the cities, we are not away from the photographers, for they are ubiquitous, and ply their vocations wherever and whenever there is anything to take by land or sea. Even as we write there is a biped and tripod on the bluffs in front of our cottage, no doubt trying to secure a novelty for his portfolio, as his Dallmeyer seems pointed hitherward. By the way, have you not seen in the list of summer resorts that Martha's Vineyard, and especially this unique city of cottages, is the most delightful retreat on the Atlantic seaboard; of all others from North Point to Cape May it is the most attractive and picture-que, and if you of the Anthony corps will seize your gripsacks and come hither I will prove the statement. Within the radius of a mile a thousand tasty and many elegant cottages in fancy architecture and colors enable one almost, if not quite, to see fairy-land. My promise is brevity, and hence I must not indulge in further description.

No doubt your stereo. collection contains many photographic art gems from this point, and yet they fail of doing it justice.

Added to the local studios of Shute, Warren, and Chamberlain, we are to have another under the proprietorship and direction of that studious and well deserving artist, Mr. Baldwin Coolidge, of Boston. Mr Coolidge has for the past year or two had charge of the department of photography in the Martha's Vineyard Summer Institute, which position he retains the present season. He has just commenced, and will have ready by Aug. 1 a new and novel studio right on the ocean front, and it will not be for want of enterprise or skillful management if he does not realize his anticipations.

It is nearing the time of the annual Convention at Cincinnati, and I am regretting my inability to join the brotherhood in the pleasure and profit awaiting them. I can only say, Boys, go out there with the best of your year's work, compare notes, get a little needed relaxation from business and come back hopeful and happy for future efforts. Our word for it, the investment *will pay*.

G. H. LOOMIS.

Extract of Psyllium for Protecting the Surface of Collodio-Chloride Prints,

BY ED. LIESEGANG, PH. D.

IN a former communication I have recommended to soak the washed collodio-chloride prints in an ammoniacal solution of bleach lac, which imparts to them a very hard surface like that of albumen prints. As this solution is not easy to prepare, and as it changes through the evaporation of ammonia, I have been induced to find another medium, and I think the best of all I tried is an extract of *semen psyllii*.

A quantity of this is covered with ten or twelve times its volume of cold water, and after standing for a day, interrupted by occasional shaking, the liquid is filtered, a small quantity of methylated spirits being added. Those who prefer to mount the prints when dry may add some glycerine. After washing, the prints are soaked in this fluid for a few minutes and dried. Even prints made on paper prepared with soluble

gelatine may, after this bath, be treated like ordinary albumen prints without the collodion film breaking.

If it be desired to give the prints a coating of varnish I find a solution of one pound of copal in two pounds of linseed oil gives a splendid and most resisting covering, if applied with a pad of cotton or a brush. Prints treated in this may be considered as permanent, neither light, nor air, nor humidity having the least influence upon them.—*British Journal of Photography*.

IN reading the European journals one constantly encounters as novelties processes and apparatus which are of long standing and constant use in this country. The *Moniteur* publishes most recently in very complimentary terms an enlarging apparatus for use in connection with bromo-gelatine paper, which we have been making and selling for some time, and which has been patented here by Mr. T. C. Roche. Not very long since the papers spoke in the highest terms of a printing-frame for porcelains on opal plates, and which as described is in all respects the same as our Campbell & Adams printing-frame, which is operated by means of a rubber sucker, etc.

We learn further from the last number of the *Moniteur* that M. Moussette has contrived a portable apparatus for taking instantaneous pictures, which is not nearly so convenient as our detective camera. M. Moussette directs his camera towards the objects to be taken by looking through two rings placed on the side of the camera. This must consequently be held up to the eyes. In ours the direction is obtained by means of a small lens which by a mirror throws the image of the object on a ground glass set in the top of the camera, upon which the operator looks down, holding the camera under the arm, or against his body, or against any firm support, if there be one at hand.

In the same number of the *Moniteur* is described a process called "photocalque," which is nothing more nor less than the

process long used in this country of drawing the outlines of a print in ink, subsequently bleaching out the print by means of bichloride of mercury, finishing the drawing (in lines) by hand, and subsequently by means of this drawing producing a lithograph.

In the same No. of the *Moniteur* in the English correspondence we find described the mode of making enlargements by throwing up the image on canvass by means of our enlarging apparatus and sketching the outlines with crayon as a new modification—"very odd." We have merely to say that years and years ago we used to sell a small sized solar camera for this very purpose, and that this mode of obtaining an enlarged drawing on canvas or on paper is still in constant use in this country.—EDITOR.

MR. M. SMITH, of Poughkeepsie, has given us the following as a very effective agent for reducing negatives that are too intense, viz., in an ounce of a saturated solution of alum mix one dram of *eau de javelle*.

This can be used in a dish, or it can be applied topically by means of a brush, taking care to have the negative partially dried so that the solution does not run beyond the part to be acted upon.

Mr. Smith states that it acts more strongly on the dense portions, and that it does not reduce the negative proportionally all over.

WE are pleased to receive from our old friend Mr. C. E. Wallin a souvenir of the Encampment of the Montgomery True Blues, ornamented with an excellent portrait of one of the officers in uniform.

We must confess to not having much military enthusiasm personally; but if we were under obligation, or had occasion to enact the part of a defender of the country, we should undoubtedly find much alleviation of our misery in the company of such agreeable companions as our friend Mr. Wallin and his associates, whose names accompany it on the card.

About the Proper Treatment of Husnik's Photographic Transfer Paper.*

BY J. HUSNIK.

To avoid all difficulties that beginners may have with the treatment of my transfer papers, although their manipulation is usually simpler than with all other photo-lithographic papers, I deem it advisable to compile all my practical experiences, made since 1872 in my chemigraphic studio, as well as by my scholars or practical operators of this process, and publish them in proper order for the benefit of my friends.

Short Synopsis of Operations.

Dissolve one part of bichromate of potassium in sixteen parts of water, and add four parts of ordinary spirits. This solution has a reddish yellow color, and as much ammonia is added until it becomes of a light yellow. A surplus of ammonia will do no harm.

The photo-lithographic papers, prepared side up, are immersed in this bath, which is kept in a zinc tray. After a minute they are taken out and hung up to dry in the dark at ordinary temperature.

After drying the paper is well smoothed, and for two to three minutes in the sun or half to one hour in the shade exposed to a line negative. After this the paper is blackened with a fatty color, dissolved in oil of turpentine to a thickness of syrup and worked down with fine cotton, so that only a fine coating remains. After a few minutes, during which time the oil of turpentine has evaporated, the copy is placed in cold water. In this it has to remain for half an hour, before it can be developed by means of a soft sponge. The development takes place by laying the paper on an even surface and making circular movements with the sponge, but without any hard pressure. The color is washed off easily from the white parts, but remains on the lines of the drawing. The copy is now washed in clear water, dried with filtering paper and afterwards hung up for thorough

drying. After this it is moistened on the back with a wet sponge and transferred to the zinc plate or stone as usual.

The chrome salt bath.—This should be lasting and still answer its purpose. Our photo-lithographic paper, as known, is so prepared that the sub-coating can not be dissolved in cold water, but the upper coating may be. If now an aqueous chrome salt bath were simply used, the upper film would dissolve in the bath and float off.

Extract from the Proceedings of the London and Provincial Photographic Association.

"A SHORT discussion took place under the very divergent opinions that had recently been expressed with regard to a long washing of prints as an element of permanency.

Mr. DEBENHAM believed that a long stay in the water was apt to cause fading—probably induced by the partial decomposition of the sizing of the paper. He had observed that prints left washing from Saturday to Monday commonly looked weaker than those which had only been in the water for a few hours.

The experience of the writer has been such as to confirm him in the belief that long washing after fixing is very injurious to the prints in every way. He was at one time in the habit of washing his prints all night in running water. Upon changing to a shorter washing (viz., three hours in running water), he found not only that the hypo. was entirely eliminated, but that the brilliancy was much greater, and the prints when mounted had an entirely different appearance. Subsequent experiments led to the understanding of the cause of this trouble, and the writer would recommend the soaking of the prints before toning in a very weak solution of hydrochloric acid as a specific against his troubles as well as against blisters. In all cases, however, it is presupposed that the paper has been fumed with ammonia before printing.

Subjecting silver prints not fumed to the action of muriatic acid would only interfere very materially with the toning. In such cases the muriatic acid should be applied after toning, and the acidity thoroughly neutralized before fixing.

H. T. ANTHONY.

* Translated from *Photographisches Mittheilungen* by H. D.

The Society of the Amateur Photographers of New York.

THE Society held its monthly meeting July 8, 1884. A variety of communications were received, among others one from the Hon. Secretary of the London Provincial Photographers' Association, Mr. Brigimshaw, in which it was proposed that there be an exchange of any reports that might be of interest. Accompanying the letter was a minute description of the last "Lecture" before the Association.

On motion of Mr. Newton the letter of Mr. Brigimshaw was referred to the Secretary and President for attention. The President then alluded to the proposition recently made to organize a national society of amateur photographers, and on motion of Mr. Newton the Secretary was authorized to open correspondence in behalf of the Society relative to the matter, and to use its influence in promoting the organization of such national association.

The names of Mr. H. N. Grisdale and Mr. M. Munzer were proposed for active membership, and the names of Mr. G. G. Rockwood and Mr. John A. Knarr were proposed as subscribing members. They were duly elected.

MR. NEWTON then spoke of the recent excursion of the Society up the Hudson. He remarked that it was the worst day's work he had had in the last ten years, and might almost be set down as a failure. He exposed in all nine plates; one of these developed by the President turned out O. K. The failures were instructive. The first two on development showed remarkable faults in the way of spots. The plates were of English manufacture and were packed in tissue paper. The outlines of the defective portions corresponded. This would make it probable that the spots were caused by some chemical in the paper acting upon both plates where they were in contact. Two more plates which he exhibited he found had been over-exposed. He detailed the treatment by which they were saved. The seventh was slightly light-struck. Three of them were Seed plates; the last

was a Forbes, and upon its development showed that two exposures had been made. How it was done was a mystery, for he failed to recognize one of the views, which was apparently a mountain scene.

MR. BEACH said that he had an experience similar to that of Mr. Newton, and showed two negatives in which the outlines of the insensitive spots matched perfectly. On the trip of the Society up the Hudson he had very fair success. He used three kinds of plates—one only developed without bromide; and in order to show the working of the developer he had brought along one or two plates that had been exposed, and that he would develop during the recess.

He then showed a special kind of focussing or ground glass made by himself. It was exceedingly fine and beautiful, and had the advantage of being easily prepared. The formula is as follows: In three ounces of water thoroughly mix 30 grains of starch. Beat up the elements, evenly diffusing the starch throughout; then boil for five minutes. The cooking is important and should be thorough. When this is evenly strained through muslin allow it to stand until cold. Some persons add ten grains of gelatine to the three ounces of water, but this is not necessary. When the starch is cold it is ready to be used, which may be on the same or the next day. Enough is poured on to the plate to cover it. It is then stirred to the edges and corners of the plate with a glass rod, and the plate is drained until the proper thickness is obtained, when it is put away.

To illustrate the amateur's feelings toward the plate-makers, Mr. Partridge related an incident in regard to the same trouble which a gentleman had had with plates having a very smooth and highly polished film. A plate was exposed and placed in the bath to develop. Around the margin development went on regularly, but in the centre of the plate no action could be perceived. The development was strengthened as much as possible; still no results were obtained. The case was one which illustrated the carelessness of the plate-makers. He said that possibly he

ought to relate the final remark of the amateur, even though some persons might think it was rather against the success of the story. On attempting to take the plate out of the dish the amateur found that the film side was down, and even then he supposed it would be still understood as showing that the plate-maker was at fault in having put the film on the wrong side of the plate. (Why insert the plate face down?) Undoubtedly the plate makers would see the point of this story, if the amateurs did not.

Mr. BEACH then showed a new form of drying-box invented by Mr. Bartholomew. It was intended not only for drying paper which had been sensitized, but for fuming as well. The drying was accomplished by the use of a lamp or heat.

Mr. NEWTON in commenting upon this gave the following formula which he used in sensitizing paper :

Water	1 ounce.
Nitrate of silver,	40 grains.
Nitrate of ammonia,	30 "
Aqua ammonia,	3 measured minims.

Upon this solution the paper has to be floated three minutes. The edge of the dish is placed towards the operator, and the paper drawn across it in such a way that the capillary attraction holds the paper in contact with it and draws off the excess of solution at the same time. In fuming this paper the ammonia should only be used at half the ordinary strength. Fuming, however, would not produce much difference in the printing. After being in use for some time the bath will become acid and must be rendered alkaline by more ammonia. It must turn litmus paper instantly. The bath can be run down as low as 20 grains to the ounce; by the hydrometer it must register 54 or 56. The bath will always keep white.

Mr. ——— asked some questions in regard to negatives which he had exposed, and which had a white deposit upon the greater portion of the film. After detailing at length his method of operations the conclusion was reached by several gentlemen that the result came from causes not un-

usual with amateurs, and consisted in a failure to wash the plates sufficiently after they left the alum bath and before placing in the hypo. bath. The acid of the alum decomposed the hypo. and threw down the sulphur, thus causing the deposit complained of. The remedy was easily found in thorough washing before fixing.

Mr. NEWTON exhibited a number of transparencies made on the new Anthony transparency plate. These consisted of several marine views as well as landscapes. All of them were beautiful, perfect in their details, and showing absolutely clear glass in the high lights. In tone they varied somewhat from a pure black to a slightly warmer tint. They were developed with ferrous oxalate. The work was greatly admired by the members.

Mr. PARTRIDGE said that he had been very greatly impressed by the very beautiful work obtained by Mr. Newton on these plates, and during the day had procured a box for the purpose of trying them. He had taken two negatives directly from nature and made some transparencies. These were exhibited. The test which he had made of the plates was somewhat remarkable, and was certainly not fair to them, since he had not used the published directions but had attempted altogether different treatment, yet they had stood it well. The plates were all very intense and perfectly pure in the high lights, without a trace of discoloration. Some of them were quite black, while others had a slightly warmer tint. He wished to know if they were well adapted to the lantern.

Mr. NEWTON remarked in regard to these transparencies that the color was all that could be asked, and except being rather more intense than was necessary, they were all that could be desired.

Mr. PARTRIDGE said that he had used in development several variations of the common carbonate of potash and hypo. developer, and three transparencies produced by such means were altogether unique. One of the plates was developed with three grains of pyro. and thirty grains of carbonate of potash to the ounce, without bromide

or sulphite of soda. The pyro. was preserved with a little oxalic acid. This plate had a perfectly black color. Another plate under similar treatment but with a small portion of sulphite of soda developed quicker than any plate he had ever seen, taking about three-quarters of a minute from the time it went into the bath until it came out and was put into the alum clearing bath. This was a negative exposed about thirty seconds at five o'clock in the afternoon. The stop used was small. The exposure was about the same as for a landscape plate. All of the plates fixed with unusual rapidity, taking on an average not more than two minutes.

Here a gentleman said that those transparencies would never do for the lantern. On being asked why, he replied that it was owing to the inevitable pyro. stain. He did not judge from the transparencies themselves, but spoke upon general principles. Pyro. always had stained those plates, and it was out of the question to use them in the lantern.

Mr. PARTRIDGE replied that the plates should not be judged upon general principles, but upon fact. The question was, did any stain really exist in the high lights? He was inclined to think that no one would have been able to detect the stain if they had supposed the plate to have been developed with oxalate of potash.

The PRESIDENT said he had been making experiments to show what difference the solutions would make in the color of the negative. The fault of the old plain soda and dry pyro. negatives was their disagreeable yellow color. By the use of the sulphite of soda he had been able to get a pure color, and in fact a great range of color, when he desired it. He brought a number of solutions illustrating the different methods of making the development, and his formulas were given as below. In developing he began with a small amount of soda and worked up to what was manifested in this method of development, as follows:

No. 1. Pyro.

Water, (warmed), . . . 2 ounces.
Cryst. sulphite of soda, 2 ozs. (437½ gr. ea.)

When cold add—

Sulphurous acid, . . . 2 ounces.
Pyrogallie acid, . . . 480 grains.

This will make five ounces of solution, and in all 48 grains to the ounce. One dram will contain six grains of pyro.

No. 2. Potash Solution.

First mix—

Water, 4 ounces.
Carbonate of potash, 437½ grains, avoirdupois ounce.

Second—

Warm water, 3 ounces.
Cryst. sulphite of soda, . 2 "

When cold mix the two solutions. They will make eight ounces.

To develop a 5 x 8 plate add three drams of No. 1 (18 grains of pyro.) to two ounces of water and five drams of No. 2, (potash). Add a dram every minute till the image appears, and then stop.

A recess was then taken and the members adjourned to the dark room, where illustrations were given of the different results which could be obtained by varying the proportions of the soda sulphite developer.

After the recess, the Society adjourned.

The Photographers' Association of Illinois.

By previous appointment the Photographers' Association of the State of Illinois, and some other photographers, proceeded on the 24th of June to Elgin, in that State, on the invitation, we believe, of ex-mayor Mr. Geo. I. Bowen. When the gentlemen reached the little enterprising city, which is located some thirty-six miles from Chicago, they were escorted to the Jennings's House and regaled in princely style. The ex-mayor was elected an honorary member.

Mr. HALL being called on made some remarks illustrative of his own individual difficulties in mounting the photographic ladder. When he first engaged in photography a silvered surface was used, and it was necessary to rasp away with a buffer. He assured the young men that there was

no fun in that when the thermometer stood at 90°. Forced to relinquish the daguerreotype, which he regretted, the ambrotype succeeded it, followed soon after by the paper positive and the negative bath—a sloppy business that lasted for a quarter of a century. Though truly a fine process, he was glad to have become a benefactor as an instructor in working dry plates, which sooner or later all would come to. Mr. Hall then gave a simile—water in low ground becomes so stagnant and foul that we look on it with disgust; but on the mountain tops we find beautiful and refreshing streams. So with photography—when in the *pools* it is looked down upon; those who can show the *master* prove that it is not a degraded profession. To-day he had been amused by a circumstance. A little girl had taken them to be a minstrel troupe, and wanted to know when they were going to perform. The way they had been received in Elgin clearly demonstrated that photographers are thought differently of now than they were twenty-five years ago.

Mr. MELANDER said he felt grateful to those who had brought them together on this occasion—something of the kind was needed to bring them together on such a friendly footing. The Society had been successful since its formation, and without exaggeration there would be two hundred and fifty members in it by this time next year.

Col. JOSLYN was then introduced by Mr. Bowen, who said that that gentleman was employed usually by the defense, and the under dog always came uppermost in every case in which the Colonel was interested. The Colonel responded that the call was rather an abrupt one. He did not know much about the business, but had been induced to come down and see the picture men. He occasionally took pictures himself of the “upper and lower dog,” which he portrayed to juries; sometimes he took pictures of two-legged asses. He made pictures of the mind. He did not make pictures of trees and houses. He transferred his pictures to the courts and juries.

Photography was an elegant business, but it had turned round a good deal. Now you could have your picture taken as you walk along; your favorite horse could be taken trotting. The photographer had not the advantages of the minister, whose income was not affected by inclement weather. The lawyer worked in a very different manner from the photographer.

Rochester Photographic Association.

MONDAY, June 30, 1884.

PRESIDENT J. M. FOX in the chair.

After the usual routine business, the following new members were elected: Rev. W. W. Walsh and H. J. Hoagland.

The motion to adjourn the meetings of the Society until the hot weather was over was lost.

The question, how to mount prints on cloth was then discussed.

Mr. MONROE stated his plan was to lay the cloth upon a board or other level surface, tack the edges and then proceed to mount the prints in the usual manner, using the paste cold, and having it first strained through muslin. To facilitate the mounting, the cloth should be first dampened.

Mr. GODFREY asked if it would not be well to paste the cloth also before mounting the picture.

Mr. MONROE had tried that plan, but did not think it would always work satisfactorily.

Mr. WARDLAW suggested coating the board (upon which the print was laid to be pasted) with paraffine; by doing so, no trouble would be had from the cloth adhering to it.

Mr. GODFREY said he had seen many excellent prints mounted upon cloth by the President, and would like to have him explain his method of working.

Mr. FOX. After trying many experiments in double mounting on muslin I have adopted the following method: I prepare several yards of cloth at a time by sizing with starch, and keep a roll of it on hand ready for use. While damp the cloth is stretched, not too tightly, on a frame and

sized plentifully with warm starch paste, made rather thin and spread on evenly. When large quantities of muslin are used perhaps tenter bars might be employed to advantage for stretching; when dry the cloth is cut to the size required before mounting, allowance being made for the expansion of the prints. If the starch for mounting is used while warm (which I think preferable), it should be as stiff as can be conveniently spread on the print, for the reason that it will expand the cloth less and dry quicker.

From the moment the first print touches the cloth dispatch is important; therefore both prints are first pasted, one being laid aside ready to be picked up quickly. The first print is rubbed down with a hand roller, which can be done more expeditiously than with the hands. When the second print is properly laid on the opposite side, there is less occasion for haste, and rubbing down by hand is preferable, because, although the roller does the work perfectly on the first print mounted, it is liable to leave air-bubbles in rolling down the second one. To avoid bubbles in the hand rubbing, the strokes should be toward the right and left, or up and down from the middle of the print, and not in every direction from the center.

When the mounting is completed the prints are put between papers and covered immediately with several folds of cloth, of sufficient weight to keep them in place. To facilitate drying they may be aired after an hour or two, and placed between dry papers and again covered with the cloth.

The question, which is the best place for an instantaneous shutter, the front or back of a lens, was answered by Mr. WARDLAW, who said: The place for an instantaneous shutter, in my opinion, is at the back of the lens; better than either at the back or front of the lens is to place it between the lenses near the stops. The reason is that vibration, which occurs more or less in all shutters, will be less noticeable than if placed in front of the lens.

The question, how to produce cold tones on ready-sensitized paper, was also answered by—

Mr. WARDLAW. Several years ago he had used ready-sensitized paper. The greatest difficulty was from insufficient fuming; and judging from prints on this paper, which he had seen of late, that still seems to be the principal fault in working it. It had been suggested to him that after the first four washings, the prints be made alkaline by immersing in a weak solution of sal soda. The tone would be greatly improved. He had seen a printing formula by one of our members (Mr. Learned) recommending the same treatment, only using borax instead of sal soda; but he still thought sufficient fuming before printing the proper thing to do.

During the discussion the subject of enamelling photographs was mentioned, and Mr. Inglis recalled the fact that the *glacé* finish which was once so popular had now gone out of style.

Mr. WARDLAW. The reason it was no longer worked was, that it required great care in the manipulation, resulting frequently in failure.

Mr. INGLIS did not think so. The process he worked was not only simple but practical, and could be easily worked successfully.

Mr. GODFREY was of the opinion that the *glacé* process was both difficult and expensive. He would like Mr. Inglis to explain his manner of working.

Mr. INGLIS. A very simple and reliable plan of making the enameled or *glacé* photographs is as follows: A sheet of any smooth-surfaced glass—plate glass is best—is cleaned by any of the usual photographic methods; now rub over the plate a solution of alcohol containing about five drops of nitric acid to the ounce; rub over the glass and polish with a dry piece of canton flannel; finally dust a little soapstone or French chalk from a small muslin-covered box containing the chalk. Brush it off lightly with a clean piece of canton flannel, being careful not to rub hard, as in that case the chalk would deaden the polish of the glass plate. This done the glass is now coated with plain collodion, five grains of cotton to the ounce of equal parts of alcohol and ether. The plate is now allowed to dry and can be

kept in this state any reasonable length of time; when dry lay the plate upon some level place and cover with a solution of plain gelatine of about the consistency of cream, at a temperature of 90 or 100°; allow the plate to lie flat until the gelatine sets, which will depend on the temperature of the room. When dry stand the plate or plates up and store them away. In this state they will keep indefinitely; and it is well to have a stock on hand in this condition, as pictures can be mounted in a few moments.

To mount the pictures, lay one or more of these plates upon some level place over the sink, so that the water to be used will have free escape to the waste pipe. Cover the plates fully with water, allowing as much to remain upon the surface as possible; lift the pictures from the water they have been washed in and lay them face down upon the prepared surface of the plate, filling it with as many prints as it will hold and arranging them according to their sizes. Pay no attention whatever to the bubbles, but have a piece of thin rubber cloth and with the squeegee press the pictures into contact with the glass, at the same time take out all air-bells by passing it back and forth over the plate.

This done run around the edge of the plate with a knife, to take off the gelatine and collodion half an inch. This is to allow the paper that is mounted on the back of the picture to adhere to the glass, which will thus bind the whole down until liberated by being cut inside of this safety edge; otherwise the pictures would be apt to leave the glass before they are thoroughly dry, and thereby lose the brilliancy they should have when properly dried.

After the pictures have become surface dry, give them a coat of thin gelatine and cover them with a wet sheet of manilla paper, or any common paper of the same size as the plate. Now mount them with cardboard known as printers' board, because it is cheap and answers every purpose. Finally cover the whole with an enamelled sheet of paper of any tint desired, thus having an enamelled mount when the picture is finish-

ed as well as an enamelled photograph. After they are thoroughly dry cut inside the safety edge, when the prints will come off with all the beautiful finish possible. The prints may now be stamped out with a round or square-cornered die, or cut with a knife to any desired shape. The edges may be bevelled and bronzed with a little gum arabic and bronze applied with a camel's-hair brush.

The entire operation is simple, and not nearly so complicated in its working as it appears from the above description.

The SECRETARY announced the receipt of the BULLETIN and other journals, after which the meeting adjourned.

W. J. LEE, *Sec'y.*

JULY 14, 1884.

AN interesting meeting of the Rochester Photographic Society was held July 14th.

The first question was, "Why do some dry plates lose more strength in fixing than others?"

Mr. LEE said that an undertimed plate would sometimes be apparently strong enough in the developer, but come out weak.

Mr. INGLIS said that where only one defective plate was found in a lot of good ones, the fault was generally with the manipulator. Sometimes when the plate has abundant exposure, after a short development it would appear to the eye to be sufficiently developed, but would print a shadow.

Mr. MAWDSLEY said he had met with plates that would develop superficially and would not be strong. He thought that the trouble was owing to a peculiar condition of the silver.

Mr. LEE inquired if the difficulty could be obviated by modifying the development.

Mr. MAWDSLEY said he would use a strong solution of pyro. and restrain with bromide.

Mr. INGLIS had found that it required longer for a thickly coated plate to fix than it did for one thinly coated.

Mr. LEE. I have seen one make of dry plates that would take longer than others

to fix; there seems to be a prejudice among photographers against using a strong fixing solution.

Mr. MAWDSLEY said he did not see any objection to a strong solution of hypo. It is commonly recommended that when a visible fixing has taken place, the plate should be left in the bath a little longer.

Mr. INGLIS had seen soda spots caused by light fixing. The spots appeared yellow.

President FOX inquired if the spots could be caused by lack of washing.

Mr. INGLIS thought not; he did not know of anything that could cause them but imperfect fixing. He had seen plates which could not be fixed by leaving them in the fixing solution an hour.

Mr. MAWDSLEY. That is the fault of the plate unquestionably. He thought that the trouble was caused by the reduction of the silver.

A general discussion followed in which the question as to the best method of photographing on wood for engravers came up. No one present had any experience other than by the old collodion process.

President FOX said that he had fixed some plates in soda and did not have occasion to print them for several days. He then found a coating of metallic silver on the surface of the solution. The only reason he could suggest was the presence of iron in the water.

The following questions were submitted for discussion at the next meeting, "Why does a lens illuminate a plate more in the centre than at the edges?" "Does it pay to save the washings, and what is the best process?"

The meeting then adjourned.

A New Sensitive Compound.

TO THE EDITOR:

Among the substances said to be sensitive to the action of light I have never seen mentioned the so-called diazo compounds, some of which are changed by the actinic rays almost as rapidly as the chloride of silver; for example, diazo salicylic acid. This

substance can be formed by dissolving salicylic acid in strong nitric acid, the vessel being kept cool by immersion in ice-water. This nitro-salicylic acid has now to be reduced to amido-salicylic acid by boiling it with an appropriate reducing agent, say zinc dust and dilute sulphuric acid, the mixture first becoming brown and then colorless. It can be separated from the zinc sulphate by evaporation—solution in alcohol—which dissolves only the amido-salicylic acid sulphate, and final evaporation of the alcohol. The amido-salicylic acid sulphate,—the acid being a base as well as an acid, becomes changed to andiazo-salicylic acid sulphate, by saturating its aqueous solution with nitrogen-trioxide gas, evolved by the action of dilute nitric acid on starch or arsenious acid. Paper, silk or other fabrics floated on a solution of diazo-salicylic acid or one of its salts, dried, printed and washed with water, shows an image of a beautiful crimson color.

R. B. WEST, M. D.

GUILFORD, CONN., July 7, 1884.

Note.—Doctor West's letter will give some of our chemically inclined readers a very interesting experiment in manipulation. It will have the advantage of novelty, since, so far as we can remember, the compounds mentioned by the Doctor have never been used by experimenters in photographic fields.

All fields, however unpromising they may seem, deserve exploration, and hold out great inducements, especially in the direction of a good and easy printing process. Silver printing is practically beyond reach of the amateur, at least in its higher branches. He can never hope to attain, with the limited time at his disposal, anything like the same excellence of result that is possible for him in negative making. This being the case a wide and remunerative field is open to one who can give a new, rapid and easy process for making prints.—EDITOR.

MR. ED. L. WILSON, of Phila., has removed to 1,125 Chestnut St., in that city.



The P. A. of A.

BY the time this number of the BULLETIN reaches the hands of our readers many of them will be *en route* for Cincinnati, and in the succeeding one we hope to lay before them a good, *readable* report of what it is hoped may prove to be one of the best, most successful, instructive and interesting Conventions the Association has ever held.

Everything has been done, so far as we know, to render it such, and nothing remains for us to say but to tender our congratulations to its officers and members for the interest they have manifested and the efforts they have put forth.

That the annual meeting, soon to be held in Cincinnati, will prove both profitable and enjoyable, we have no manner of doubt. The attendance, judging from the numerous excursions advertised from different quarters, and the co-operation manifested by the dealers in photographic stock at St. Louis, Chicago, and elsewhere, will probably exceed that of any of its predecessors; and we trust it may.

Fifth Annual Convention and Exhibition of the Photographers' Association of America.

*To be held in Music Hall, Cincinnati, O.,
July 29th to Aug. 1st, 1884.*

OFFICERS: J. H. KENT, *President*; LEO WEINGARTNER, *Secretary*; W. A. ARMSTRONG, *Treasurer*. *Executive Committee*: J. F. RYDER and E. KLAUBER.

The Convention will open at 10 o'clock A. M. on Tuesday, July 29th, and continue until Friday afternoon, August 1st. Sessions will be held at the same hour each morning, chiefly for the transaction of regular business.

The President, Mr. J. H. Kent, will give demonstrations in the posing of a sitter and the management of the light.

Mr. J. F. Ryder will read a paper before the Convention on the subject of the management of the studio; and from his well-known reputation as a photographer and writer, the members may expect not only to be entertained, but also instructed. The entire programme will be duly announced.

Dark rooms will be erected in the hall by the different dry plate manufacturers, with suitable light, water supply, and the best facilities for the development of the plates. Neither chemicals nor plates need be brought.

Pictures placed on exhibition must remain until the final adjournment of the Convention. Several prizes are offered by the dry plate manufacturers.

Photographers and others interested in the study of photography are invited to join the Association. Dues, two dollars a year. No initiation fee is required. All wishing to become members are requested to forward the sum specified to the Treasurer. Each member having paid his dues will receive a badge, that will admit him at all times to the meetings and the exhibition.

The prices of hotel accommodations are reduced. The Secretary will have an office in the Music Hall during convention week, where he will give information to those in need of it.

The two dollar annual dues are very urgently needed by the Treasurer. In fact, it is next to impossible that the P. A. of A. can be *properly* conducted without a *timely* remittance from all of its members.

Mr. Ryder's Gallery.

MR. RYDER of Cleveland has just added an art gallery to his establishment. It is about twenty feet wide by thirty-eight feet in length, and is furnished with a very fine top light. At the time of our visit a few weeks ago there were more than one hundred pictures on the walls, most of them oil paintings, though there were a few engravings, some fine colored photographs, and one or two new chromos.

An hour or two can be very delightfully spent in this gallery by the visitor. Much of the work was by local artists, and speaks well for the talent of the town as well as for its patronage. The framing of the pictures was something superb. In the entire lot there were scarcely two pictures framed alike, except, of course, those intended for companions. Many of the frames are unique in design, and all of them exceedingly artistic and appropriate to the subject of their pictures. The mirror framing was especially noticeable for its beauty and artistic effect. The prices for these frames are

surprisingly low, especially to those accustomed to the figures asked for first-class work in New York City. In most cases, New York people could do as well by sending to Cleveland for fine frames and having them sent by express as in the best shops on Broadway or Fifth Avenue, and at prices entirely below the ordinary run of fairly good work.

As most of our readers know, Mr. Ryder has an artistic photographic establishment in a double sense, not only keeping photographs and doing a general photographic business, but having also engravings, pictures of all kinds and artists' materials for sale.

In addition to the regular picture gallery, which is on the third floor, Mr. Ryder has, on a level with his operating room, a large room with a top light in which exhibitions of pictures or statuary can be very conveniently given, and he has found it very useful for this purpose. It was formerly, we believe, his reception room. The latter, however, has been removed to a floor a few steps further down. The office is a sort of half-way house between the upper and lower floors, situated above a landing overlooking the store, and, like the reception room, is very prettily furnished. From it a very pleasant view of the store with its art treasures can be had. The stairway is a sort of gallery of rare foreign photographs, both colored and plain. Many of them are masterpieces of modern artists.

The Photographic Eye.

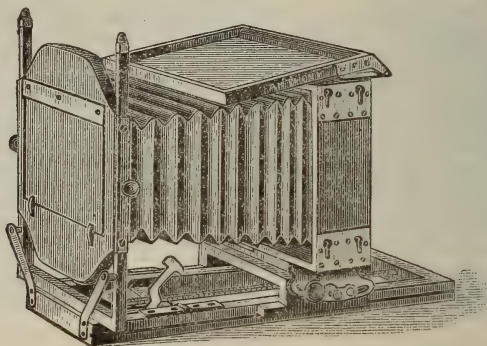
SINCE our last issue the *Eye* has become strictly a *Photographic Eye*. The editor, Mr. C. Gentile, assumes both the quill and the tripod, and announces that henceforth the paper will be *strictly* a photographers' weekly journal, but will continue to give instructive literary matter that may prove useful and interesting not only to the photo. himself but to *his whole family*, and also his customers. The subscription rate will be \$2 50 per annum, and every member of the craft will want a copy of it.

The Fairy Novel Camera.

WE have the pleasure of again presenting a novelty—a fairy in its way—in the form of a camera.

This beautiful instrument, if it fails to

become the wonder, will certainly elicit the admiration of the photographic world. It is so very *novel*, so light, so manageable, and so attractive in its construction that every one must concede it the palm. The wood-cuts afford but a faint idea of its ap-

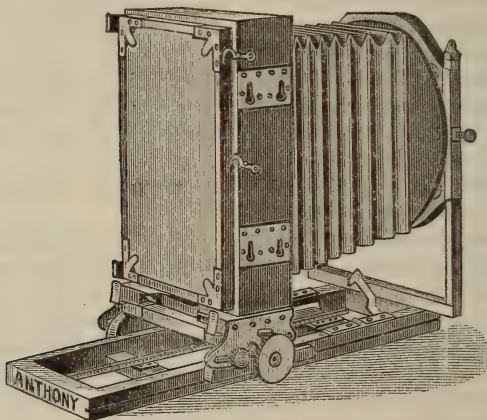


WHEN USED HORIZONTALLY.

pearance and real merits; to be fully appreciated it must be seen. Briefly it may thus be described.

The front, camera and bed are as rigid as wood skillfully and ingeniously combined with metal can render them, and the metal

frame-work of the front is braced with metal at the lower corners. The inner front, conjoined with a cone bellows, revolves, and the body of the camera, as in the Novel, can be quickly detached and re-adjusted to the bed either uprightly or hor-



5 x 8 WITH STEREO. ATTACHMENT, USED VERTICALLY.

izontally. This readjustment is effected by means of slots (as seen in the figures), four of which are fitted into one of the lateral and

four into one of the longitudinal ends of the wood-work of the body, and slide on corresponding metallic pegs in the bed.

The bed may also be instantly rendered rigid by a brace of hooks, and the camera itself is focussed with a long, continuous rack, governed by a cog wheel and pinion held firmly in position by a binding screw.

The plate-holders, the lightest yet seen, are of the Anthony pattern, their plate carriers being inserted from the end and kept in place by metallic loops.

The back of the camera is rabbetted outwardly, and over that moulding the plate-holder closes tightly. The latter is also held closely by hooks.

The ground-glass swings backward, out of the wind (if there be any), and is held securely in its frame by means of metallic spring corners.

The camera is provided with the vertical swing movement of the back only, and is furnished with six double dry plate-holders as above, all of which are packed in a substantial, though light, canvas-covered wooden case, each plate-holder having a separate compartment. All of the metallic trimmings are nickel plated. Those with stereoscopic attachment are even somewhat lighter and a trifle more compact. All are made in polished mahogany at the following rates:

Including Six Double Dry Plate-Holders.

4 $\frac{1}{2}$ x 6 $\frac{1}{2}$, without stereo. att.,	\$52.
5 x 8, " " "	55.
5 x 8, with " " "	55.
6 $\frac{1}{2}$ x 8 $\frac{1}{2}$, " " "	65.
8 x 10, " " "	75.

E. & H. T. ANTHONY & CO.

Another Ingenious Labor-saver.

MESSRS. HILL & WILSON, lately of Salt Lake City, have just shown us a remarkably ingenious instrument for photographic printing. Desiring to do their work in the best manner and with a minimum of expenditure both as to time and materials, they have constructed an apparatus operated by clock-work, whereby ordinary silver or gelatino-bromide printing can be quickly and uniformly performed automatically.

The sensitized paper is cut into strips for (say) a dozen (14) prints and the work pro-

ceeds, after once being set, with the utmost regularity. The sensitized strip is wound on a cylinder, and at certain intervals, according to the degree or intensity of light, passes beneath the negative, and when the proper period has elapsed the print revolves into the dark chamber and another takes its place. When the last photograph on the strip is printed a signal is given, the print passes onward, and the revolution of the cylinder ceases. A dial, provided with 60 delicate springs, regulates the exposure, and this is accomplished in the simplest manner imaginable. These springs may be inserted, according to the requirements of the negative, in a circular succession of holes, and invariably obey the monitor which governs the exposure.

Another important feature is the variation of the speed according to the actinic power of the solar rays, gradually increasing towards noon and decreasing afterwards. The clockwork runs unremittingly, (day and night) for ten days, consequently no readjustment is necessary—that is, if the work is suspended for any period within ten days, the operation recommences with precisely the same speed as if it had been constantly running.

The prints being in strips, the toning is necessarily uniform, and it is claimed that twenty-five per cent., at least, of the material is economized, no margins being necessary; there is also a saving of time in trimming. The printer has been operated in our presence, and notwithstanding the fact that the sky was alternately cloudy and cloudless the resulting prints were singularly uniform. The printer will not be expensive, and will therefore come within the reach of all.

Hot Weather Photography.

SOME fine stereoscopic negatives taken with a rapid drop shutter have been made this week by our Mr. T. C. Roche, including views on Broadway, the harbor, etc., on the genuine Tropical plates. These can be used with any good developer *without ice or alum*. It is quite a treat to look upon such nice work.

The Air Brush.

ONE of the striking novelties at the last Convention was the Air Brush, a little instrument which astonished and delighted large concourses of people who stood watching its work in the hands of one skilled in its use. It is purely a Yankee invention, and as ingenious as it is labor-saving. The effects producible are simply marvelous to those who witness them for the first time. A little panful of ink or color is thrown at will into soft, delicate lines, or heavy, deep masses by a simple pressure of the thumb and an elevation of the wrist or arm. The spray is ejected by a needle, which makes 5,000 revolutions a minute, and by means of the slight forward or backward movement of the thumb the quantity of color discharged is regulated.

We understand that the apparatus is now in perfect working order, and that it will soon be supplied in quantities to suit the demand.

An obvious advantage of this instrument is the facility with which the unskillful may imitate, if not excel the hitherto inimitable touches of the skilled artist. With it any person of taste may do what otherwise he could not do without much preliminary practice, for it renders unnecessary that laborious drudgery every artist has had to perform in mastering the *technique* of his profession; but it *cannot* supply artistic taste itself, however much it may tend to cultivate it. See what others think of it.

NEW YORK, July 16, 1884.

TO AIR BRUSH MFG CO., Rockford, Ill.

Gents: Every one who uses brushes should use the "Air Brush" also.

W. KURTZ, New York.

JULY 17, 1884.

AIR BRUSH MFG CO., Rockford, Ill.

Gentlemen: I think that the Air Brush, as an accessory for shading, is smoother and quicker than brush or stump. SARONY.

ROCHESTER, N. Y., July 7, 1884.

THE AIR BRUSH MFG CO., Rockford, Ill.

You desire that I should give you for publication my opinion of the Air Brush.

I have no hesitation in saying that so far as I have tested the one in my possession and seen it used by an artist more expert than myself, I find it possesses advantages beyond anything I had anticipated, and is really a remarkable and valuable instrument as auxiliary to the crayon or pencil in the hands of an artist, enabling him to produce effects in a few minutes that would require hours of careful labor to accomplish by any other method, if indeed it would be possible by any amount of labor in the ordinary way to render the same results.

To be frank, however, I must express a doubt of its being a benefit to art industries, since the facility with which work can be accomplished with it—and *really good work, too*, will have a tendency to cheapen art productions by making it possible for those of less ability to compete with first-class talent.

Nevertheless, since it is an established fact and cannot be voted out of existence or ignored, it is probably best to make the most of it by getting out of it all the advantages possible. And while I am unwilling to admit that there could be any excellence in an appliance that would tend to reduce art to mere mechanism, I cannot but concede that the Air Brush is as free from such objections in its application and results as the ordinary brush or pencil, and therefore I reluctantly endorse the *so-called* machine. Very truly, J. H. KENT.

Mr. Will. H. McEntee demonstrated before the Kit-Kat Club "the workings of the Air Brush, a new art tool for the production of drawings in liquid pigments," on Monday evening, July 21st, at No. 23 East 14th St., this city.

THE death of Mumler, the spirit photographer, revives some interest in "spirit photography," by which fifteen years ago he made quite a sensation. Some of the gentlemen who were witnesses may now throw some additional light on the subject.

Fifth Annual Excursion.

NEW YORK, July 5, 1884.

EDITOR BULLETIN.

It afforded me much pleasure to be present on the occasion of E. & H. T. Anthony & Co's Employees' Fifth Annual Excursion, which took place on Thursday, July 3rd, at Mount Pleasant on the Hudson.

The "Republic" is the "Jumbo" of barges, and Capt. Ryan the "Barnum" of the fleet. The day was fine and the Grove seemed to be charmed, for music was discoursed by Prof. Chave's Band. The entire party gave themselves up to pleasure, and nothing occurred to mar its enjoyment.

We missed the genial face of the Egyptian, which we had the pleasure of meeting at the Roche testimonial dinner, and heard a long drawn sigh on account of his absence.

We also regretted that urgent business detained the manager of the factory from being with us.

All went merry as a marriage bell. When the next excursion takes place, please count us in. We remain yours, etc.

GUEST.

A New Gelatino-Chloride Emulsion.

THROUGH the courtesy of Mr. A. L. Henderson, who has just arrived here from London, we have been favored with the following formula, contributed by Mr. John Crosby, we believe, for a new gelatino-chloride emulsion. Some of the results shown on opal glass were certainly very beautiful. As given by Mr. H. the formula stands thus:

Hard gelatine, 80 grains, dissolved in one and a half ounces of water; nitrate of silver, 75 grains, dissolved in half an ounce of water; chloride of sodium, 21 grains; citrate of potash, $\frac{1}{2}$ ounce; warm and dissolve.

Warm the solution of silver and gently pour it into the gelatine; then add the sodium and citrate, also warm, stirring all the time. Pour into a dish to set. Work in a yellow light. Wash in the ordinary

way, but keep very cool, as this is very thin. Then melt up and add two drams of alcohol, containing three grains of salicylic acid and one grain of chrome alum in a little water. Warm, filter and coat.

The emulsion is almost as thin as water. If great contrast is wanted, work it thicker; the reverse of this for softness. The emulsion will not keep; therefore make small batches, as required.

Tone in a borax bath. Well wash and fix in hypo, 20 per cent., at least ten or fifteen minutes. Wash well and give a bath of alum. I print in the ordinary printing-frames and find no difficulty in using them. Put the negative and opal glass to one end and examine as often as you please.

An Influx of British Photographic Celebrities.

MANY of the more prominent gentlemen whose names are identified with the photographic art in Great Britain are about to visit our shores for the purpose of attending the meetings of the British Association for the advancement of science soon to be held in Montreal, and to join the excursionists who intend to catch a few glimpses of our Western wonders in the Yellowstone, the Yosemite, and other inviting fields. Mr. Henderson has already arrived and will be in attendance at Cincinnati during the Convention. Captain Abney, Messrs Trueman Wood, Frederick York, James Glaisher and others will follow, nearly of all whom we are promised the pleasure of meeting in this city.

MR. B. J. FALK has kindly sent us some prints of his aerial portraits. One particularly, "The Curfew," in which Mrs. Chas. Watson, the actress, is shown in the clever attitude of swinging over the battlement is remarkably good. The difficulty in the way both of the subject and the photographer are graphically given in an article published in the *Dramatic News* of May 27, entitled *Mid-air Photography*.

July Meeting of the Photographic Society of France.—A Claim of Priority by M. Tailfer.—

THE usual monthly meeting of the Photographic Society of France was held on Friday last, the 4th instant, M. Davanne in the chair.

M. Attout Tailfer, the maker of the isochromatic gelatino-bromide of silver plates, made a protest against the tendency of the Germans to pirate his patented process, and to publish as their own his mode of working. He drew the attention of the Society to the publications of Vogel, and of Lohse, of Potsdam. The latter had taken his formula to the letter, and was reported as follows in the *Photographisches Archives*:

"Loshe, of Potsdam, has indicated a simple means of preparing isochromatic plates similar to those presented to the Society in 1883 by Messrs. Tailfer & Clayton.

"He (M. Loshe) takes an ordinary gelatino-bromide of silver plate and plunges it into a bath of eosine rendered alkaline by ammonia. The effect obtained depends upon the concentration of the solution of eosine. If the maximum of sensitiveness for the yellow be required it is obtained in mixing—

Water,	. . . . .	100 parts.
Eosine,	. . . . .	3 "
Ammonia,	. . . . .	10 "

The quantity of eosine which the gelatine absorbs is very small, nevertheless its action is very powerful.

"By employing curcuma instead of eosine better results can be obtained, as the plates are not only sensitive to the yellow rays, but all the rays of the spectrum, from the violet to the yellow, have an influence upon the plate. If it be necessary that the yellow should have a predominant action upon the prepared surface it would be probably better to employ a mixture of eosine and curcuma in the solutions."

A long discussion took place, in which it was proved that Major Waterhouse, of Calcutta, was the first to propose coloring the

film to obtain different results; then Ducos du Hauron. But the Secretary said that he supposed that the latter gentleman only employed the eosine in collodion emulsions, and not in those of gelatine. I answered that I had prepared plates by staining the gelatine emulsion with eosine for Ducos du Hauron, and for many of his pupils, years ago. A further discussion would have degenerated into the question of commercial rights, etc., so M. Tailfer was requested to address a letter to the Society stating his grievance.—*British Journal of Photography*.

Ewing & Co.,

Of Toronto, have mailed us a handsome specimen of the typographic art printed in true blue, announcing their removal to new and commodious premises at No. 87 Front St., in that city, where they have fitted up one of the most convenient and complete establishment of the kind in the Dominion. The building is situated directly opposite the Queen's Hotel, and is a handsome red brick and cut stone structure, comprising four immense flats.

On the first floor is the machinery and also the whitening and packing room; the second is an immense sample and stock room, and the third and fourth flats constitute the picture-frame, mirror and moulding finishing rooms.

Photographic stock is a prominent feature of the business, which is being developed, it would seem, with surprising rapidity. All the novelties may be seen there, it is said, and every photographic requisite may be had of this enterprising firm.

Ho for Cincinnati! Mr. Clifford will be there, and Mr. Joshua Smith will be there, so says *The Eye*. Mr. Smith also promises the attendance of the Illinois photographers *en masse*, and the State of Illinois Photographic Society. This gentleman is very sanguine concerning the success of the forthcoming Convention. Let us hope that his "great expectations" will be abundantly realized.

An Improved Light for the Dark Room.

A FINE olive green, found to be one of if not the best (Mr. Hull says it is decidedly the best,) color for the dark room window, may readily be provided by flowing one side of the ordinary orange colored glass with a solution of aniline green in ordinary negative varnish. Mr. Newton, who has sought a simple method of preparing this glass on account of the difficulty in getting it from the stores, recommends the above. The orange glass is nearly always on hand with the photographer, and easily procurable by the amateur. If not, the same effect may be secured by flowing sheets of glass on one side with aniline orange and the opposite side with aniline green.

Stoddard's Camera and Posing Chair,

MR. I. H. STODDARD, of New Haven, whose inventive and mechanical ability our readers have already had several opportunities of knowing and admiring, has just shown us two beautiful novelties. Both were made entirely by his own hands, and the quality of the workmanship speaks for itself. If many of our customers were so skillful in the use of tools and as ingenious in contrivance, there would be little left for the apparatus makers to do. Mr. Stoddard proposes to attend the Convention in Cincinnati, where these excellent specimens of handiwork will be on daily exhibition, and their novelty in construction and handsome finish may be fully examined and admired.

M. Klary in America.

M. KLARY, who formerly conducted a flourishing business in Algiers, has abandoned Africa for Paris, where he intends to reopen on a magnificent scale, and with all the later improvements. Part of the plan will include portraiture by electricity, for the better introduction of which M. Klary has favored America with this visit. M. Klary expresses himself very favorably regarding many things here, and is especially pleased with the decided superiority of

American work, particularly in the line of artificial light as practiced by Mr. Kartz, the results of which are greatly in advance of anything yonder

There is one point, however, that this gentleman observes to our disadvantage, he thinks—we might learn a lesson or two in regard to general neatness and order in the galleries, not only in the reception room but in the operating and other apartments, and be a trifle more polite, or attentive rather, in the reception room. The French may, if anything, be almost too obsequious in manner towards their *clientèle*, but the new world photographer perhaps makes something of a mistake in the opposite direction. Foreign travel is undoubtedly one of the best means to educate, and ocean fares are cheap.

AMONGST the 750 members of the British Association who have signified their intention of attending the meeting at Montreal on August 27, we notice one name very familiar to us, Mr. York, of Notting Hall, London, the extensive manufacturer of optical lantern slides. We hear that he intends visiting the principal cities of the United States as well as Canada. He will doubtless call on some of our photographic friends, as he will have his camera with him and may want a little professional assistance, which we are sure will be most cordially granted.

MR. KENNEY, of Hackettstown, N. J., sends us a remarkable outdoor group of the Smith Family, of whom there are said to be six generations before the camera. The group, of course, represents both sexes of all ages, and was made on an Eastman Special plate with an 8 x 10 E. A. single achromatic lens.

THE railroads generally in the West and Southwest have granted special rates to the photographers attending the Convention, and some of them agree to *return* the excursionists at the rate of one cent per mile. On most of the roads tickets will be good two days before and three days after the Convention.

CORRESPONDENCE.

ALBANY, N. Y., July 16, 1884.

FRIEND BARKER.

The 14 x 17 Camera,* just received from you, is the best and most complete one that I have ever worked. The first sittings made with it were of Gov. Cleveland, (eight in number,) and the compliment paid us by the Governor should have been given the makers. Your friend,

E. S. STERRY,

of McDONALD & STERRY.

NEW YORK, July 8, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Dear Sirs: I have given the "Waterproof Retouching Varnish" you sent me a thorough trial, and find it just what retouchers have long looked for and what photographers have needed. It is superior to any varnish I have ever used, and works splendidly without grinding or any other preparation.

Yours truly,

J. K. COLE.

Retoucher for the trade.

PHILADELPHIA, PA., July 4, 1884.

EDITOR ANTHONY'S BULLETIN.

Dear Sir: An article by C. T. Chetman, reprinted in the June BULLETIN, (p. 242), contains a misstatement which I wish you would kindly correct in your next issue. It is to the effect that the Heliochrome Co. own the rights covered by my patents in this country. The Heliochrome Co. do not own any rights under my patents, and the process is now operated only in the establishment of Crosscup & West, who are the sole licensees. There are other misstatements in the same article, but I think they will take care of themselves. My ox-

ygen cylinder, shown on p. 253, holds thirty feet of gas instead of eighty.

Respectfully yours,

FRED. E. IVES.

ST. GEORGES, BERMUDA, April, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gentlemen: I presume that I shall soon have to keep a stock house, on account of the grief that the innumerable amateurs come to in Bermuda. I am told that with one lady on board ship, whilst taking instantaneous views going down channel, the ship gave a lurch and overboard tripped tripod and camera. One day in front of Hamilton Hotel I was amused at the way an amateur grabbed hold of the lens to carry his camera along. He was well dressed, but *some way* lost his balance, and his camera left the lens in his hand. Enough focussing glass was left for his purpose apparently; but the trouble was with his partner, who had mixed up exposed plates with non-exposed, when the camera man told him that any blasted fool could tell that, and assorted them in the street to the satisfaction of both parties.

Another amateur came in with as much haste as if he had been shot out of a 130-ton gun to buy, beg, or borrow a ground glass, as he had accidentally trod on the one that he had; another broke the tripod screw of the camera, and the urchins collected the pieces as souvenirs. There was, however, one man who understood what he was about, and had made a series of good negatives, had *done* the Island with his wife in a little cariole; but vanity was part of the stock on hand, consequently driving up Front Street near the Ice House, the camera must be seen hanging out over the back seat, when an unexpected jolt caused said camera to go out on its own account, and the amateurs, when endeavoring to save their apparatus, tumbled out the box of negatives and all were spread out to public gaze. A boy who assisted to pick up the glass was heard to say, "can't see a darn thing."

Yours,

JOHN A. FRITH.

* 14 x 17 Climax Camera with a Double Swing, Telescopic Bed and Benster Plate-holder.—ED.

ANTHONY'S

PHOTOGRAPHIC BULLETIN

FOR AUGUST, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

Page, for a single issue,	\$15
Half page, " "	8
Quarter page, " "	5
Eighth page, " "	3
Special Notices, per line,	25 Cents.



Anthony's
Photographic Bulletin,
ILLUSTRATED

Terms for 1884: Two Dollars.

Unillustrated, One Dollar.

Payable in Advance,

And only to those who pay

Fifth Annual Convention

OF THE

Photographers' Association- tion of America.

THE Fifth Annual Convention of the Photographers' Association of America is now an event of the past, and one of the most successful gatherings of the photographic fraternity that has ever been convened in any land has since our last issue assembled and dispersed. Upwards of two thousand enthusiastic practitioners of the photographic art were witnesses and participants, either as professionals or amateurs.

For several days prior to the 29th, the designated date of assembly, scores of zealous gentlemen, accompanied by their relatives and friends, had already registered their names at the Palace Hotel and elsewhere in Cincinnati, to be in readiness for the forthcoming conclave. On that day at the appointed hour the talented and popular president, Mr. J. H. Kent, announced in brief but stirring words the formal opening of the Convention, and the business at

once began ; while in another portion of the immense hall were gathered thousands upon thousands of the finest specimens of the art America has yet produced for the admiration of the craft and the gratification of the public.

Under the same roof were also exposed for exhibition the largest and most elaborate display of photographic apparatus, materials, chemicals and accessories brought together on this continent, including an immense array of Entrekin's celebrated Eureka burnishers ; an ingenious and highly finished camera and position chair invented by Mr. I. H. Stoddard and produced by his own hands ; the unique self-working printing machine of Messrs. Hill & Wilson, of Salt Lake City ; the Novel Fairy camera, lately introduced, and a host of other novelties and requisites.

As to backgrounds and accessories the display was truly surprising ; and the queer little instrument known as the air brush, there operated by Mr. McEntee, astonished all who for the first time became aware of its possibilities.

A conspicuous feature of the Convention was the active co-operation of the rival dry plate manufacturers, by two of whom good round sums were offered as prizes. This had the somewhat unexpected effect of adding largely to the exhibits, and giving great prominence to certain varieties of dry plates, for many were hopeful of being classed among the fortunate competitors.

It was observed, however, that the very finest work exhibited was made on the Eastman Dry Plates, specially those by Messrs. J. H. Kent and Gregg, of Rochester, although no prizes were offered by the Eastman Dry Plate Company. These exhibits were therefore not entered in competition for any prize.

Another noticeable change was the meagreness of discursive, and the abundance of informal instruction provided. Very few papers were read, but in extent the oral dissemination of practical information was almost unlimited, and its usefulness will soon become apparent. The wisdom of this course became so manifest that, without doubt, the long, time-consuming dissertations once in vogue will be reserved exclusively for publication by the press from this day forward. And well they might be, perhaps. When the tired workman desists from his accustomed duties and spares a few days for much needed rest, it is unwise indeed to devote the few fleeting hours at his disposal to a discussion of subjects that he can more intelligently pursue in the privacy of his own home and at his leisure.

Throughout, the very best of feeling was displayed, and, for so large an assemblage, an unanimity of action that does great credit to the participants. Good fellowship in high degree prevailed, paving the way for much mutual counsel and instruction ; the opportunities for intelligent criticism of the different exhibits were never greater, and many an aspirant for future fame must have been benefitted thereby immeasurably.

Comparison affords one of the best means for improvement, and its effect on so large a number is well-nigh incalculable. The practical outcome of so much widely distributed experience and observation is very generally believed to be the primal cause of that high standard of excellence to which American photography has thus far attained.

In this respect the Convention just closed was truly successful, promising much for the real advancement of its members, and went

far towards promoting that wide spread interest which should be shared by the entire fraternity.

That favored few who by dint of culture or endowment lead the van in photographic art very naturally disclaim much benefit from these annual reunions; but surely there can be none so wholly unmindful of the less fortunate as to feel no interest in their behalf and to deny a helping hand. Perhaps it may be that sufficient effort is not expended to induce these possible benefactors to lend their aid; but little by little even this difficulty may be overcome, under the influence of generous impulses and judicious management.

Notwithstanding, it gives us great pleasure to record the fact that several very eminent photographers, whose work proclaims them to be in the foremost ranks, contributed liberally in means, time, influence and talent to render good service and encouragement to the fraternity at large.

Too much cannot be said for the zeal with which the officers discharged their arduous duties, and they have thus earned the lasting esteem of the entire profession.

Under the new management and the leadership of so successful a man as Mr. Landy, the next annual Convention in Buffalo gives great promise.

The Report.

CINCINNATI, July 29, 1884.

The Convention was called to order at 10:30 A. M. by President Kent.

In the absence of the Governor of the State of Ohio, and the Mayor of Cincinnati, Secretary Leo Weingartner delivered the address of welcome, as follows:

Mr. President and Gentlemen of the Photographers' Association of America:

It was expected that the Governor of the

State of Ohio would be present to-day to welcome you to our city and to our state, but he has been detained at Columbus by executive duties, and the Mayor being out of town, this pleasant duty has devolved upon me. (Applause.)

I bid you welcome to the city and its hospitalities, and I trust your stay with us will be both pleasant and profitable, and that you will return to your homes satisfied that the officers of the Association have done all in their power to make the Fifth Annual Convention a success in every respect. (Applause.)

The PRESIDENT. I regret that we could not have had the Governor here to deliver the opening address as it was expected, and, as has been intimated by Mr. Weingartner, that we could not have had the Mayor also. It is to be regretted that neither of these could have met with us and given us an address of welcome; but I congratulate you upon having escaped a long address from your President or Secretary in consequence of being disappointed by these distinguished gentlemen. Without any other formality I will now announce the Convention open for business. I see that Mr. E. L. Wilson has come to the hall; will he please come forward to the stage.

Gentlemen of the Association (I should say, ladies and gentlemen, as I see there are some ladies in the audience). I have to make an acknowledgment in opening this Convention of a weakness I possess. I never possessed but one, but the one I speak of has troubled me all my life, and I regret to say that it does not decrease with my increasing years; I refer to my inability to remember names and faces. I am able to remember the names of my most intimate friends; for instance, I can remember our friend and co-worker here, Mr. Ryder (I think that is his name), and whom I shall never forget; also I can remember our friend Mr. Weingartner, and our distinguished friend here, Mr. Wilson, whom nobody will forget, *if he can help it*. And, too, here is our vigilant and faithful ex-president, who has so peculiar a name I am unable to recall it at this time. I remember to have read it in the Bible when I was

younger. I believe it comes somewhere before Judges—a position I trust he will never be compelled to occupy. I mention this peculiarity of mine as an excuse for asking each one of you when you arise to address the Convention, or to make an elaborate speech, to announce distinctly your name and address, rather than to place dependence on my memory; and if I should chance to call Brown Smith, or Smith Brown, I trust you will make no exception to it, and remember that your identity is not impaired by the mistake. Without further remarks we will now proceed to business. (Applause).

I think the first matter is the calling of the roll; but, if I remember aright, this has been dispensed with at all the former meetings, and it seems to be entirely unnecessary. A motion will be entertained to dispense with the calling of the roll.

The motion to dispense with the calling of the roll was carried unanimously.

The next business in order is the reading of the minutes of the last meeting. If the Secretary has prepared the minutes they will be read.

A motion to dispense with the reading of the minutes was carried.

The next business in order is the report of the standing and special committees, which will be read by their titles. In the order of business in the by-laws these reports may be read in full or by their titles, and laid on the table for future consideration. I understand there is a report made by Mr. Gentile, which he is to read; also a report made by J. Traill Taylor, which has not yet been received. If there is no objection Mr. Gentile will now read his report.

Report on the Progress of Photography.

BY C. GENTILE.

The President of our Association has informed me that Mr. J. Traill Taylor had resigned his position on the committee appointed at the Milwaukee Convention to report on the Progress of Photography, and that he would expect me to make a report or get the committee to do so.

As the committee has had no opportunity to confer together or make a joint report I will

endeavor to the best of my ability to make an individual report, which I hope will only be supplemental to those by others who are more capable than myself to furnish one.

I much regret that we have no report from the able pen of Mr. J. Traill Taylor, as I know it would have interested us and been appreciated.*

As regards the Progress of Photography during the past year, it will appear that there has not been any very marked improvement to record. But let us reflect and see what has been done, for most assuredly there has been great progress in the spread of the knowledge of our art-science. Never has there been a year so prolific in the creation of photographers in America as the past one. If we go on increasing in the same ratio it will not be long before the number of amateurs will outnumber the professionals. In my opinion this influx of educated men of an enquiring turn of mind will be anything but harmful to our profession; it will assuredly tend to elevate it in the estimation of the public, a thing we stand in need of.

One rapid stride that photography has recently taken is the use that is made of it in courts of law as a means of aiding juries to form just and exact opinions on matters that otherwise would be in doubt.

In cases of forgery, duplications of precious documents, comparisons of specimens, of textile fabrics, blood and crystals, it is constantly used with ever-increasing advantage, and the veracity of the testimony of the expert is put beyond the question of a doubt. The detective camera has also been brought into practical use, and adds its assistance in the detection of the criminal.† In jails and penitentiaries, likewise, the camera and photographer has penetrated, and an instantaneous likeness of each new inmate puts the prison authorities in possession of a description of a prisoner far more accurate than any verbal explanation. Many experts have been brought from the ranks of the amateur photographer, because the professional photographer has not the time or means to make it a specialty and give it that study an amateur is capable of doing.

In Europe one of the most marked improvements or discoveries has been made by Dr. Hermann Vogel of Berlin, he having discovered

* A communication has since been received, as seen elsewhere.—ED.

† And many beautiful and interesting things not criminal.—ED.

a process by which colors can be photographed in a manner that will render their just values more correctly than hitherto has been the case. The learned Doctor has given his process to the world, which has been appreciated by his countrymen, who have voted a handsome testimonial prize for his services in this and other improvements in our art. However, from recent European advices it seems likely that Dr. Vogel's claims to this discovery are to be disputed, as Mons. Attaut Tailfer, a Frenchman, claims that he is the inventor and patentee of the isochromatic gelatino-bromide of silver plates; and in a long discussion that occurred on the 4th of July before the Photographic Society of France it was proved that Major Waterhouse of Calcutta had a prior claim, being the first to propose coloring the film to obtain different results.

In many branches of what would be called commercial photography, great progress has been made during the past year.

I have reference to the mechanical means of rapidly multiplying photographs by means of processes known as typographical or lithographic; a process known as the ink process gives very beautiful results, being extensively used in England, and we frequently receive illustrations in their journals that prove the perfection they have arrived at in this mode of producing a plate that can be employed in the steam press, as the Sprague ink photograph, which has been used for book illustrations.

We have every reason to believe that the time is not far distant when our daily papers will be illustrated by the aid of photography, for there have been many and great improvements in block work by Ives, Meisenbach and several others well known to us.

The bromo-gelatine dry plate as we see from the exhibition before us in these halls has made immense strides in popularity during the past year. It is needless to say much on this subject when we have such a show before us of facts indisputably proving the superiority of the dry plate over collodion and the negative bath, which are being very rapidly put aside by all progressive photographers to-day. An operator now who cannot work dry plates satisfactorily stands a poor show of obtaining a first-class situation.

The dry plate has caused a revolution in our business in many ways; the smallest country photographers can now claim to use exactly the same chemicals as the best operator in our

profession; but I would remind them of a recent remark made by Colonel Stuart Wortley at the last meeting of the Photographic Society of Great Britain, when he said he could teach a person how to make a plate, but that to develop a plate was a *science*—a most true remark as regards developing. The making of a really first-class plate is no easy matter, as any one thoroughly conversant with their manufacture will admit.

I regret to say that during the past year we have lost several leading lights in photographic literature—I allude chiefly to the recent loss to photographic journalism of Mr. H. Baden Pritchard, who has done much for us, and I am sure his death will be a great loss. There have been several other losses of men prominent in the profession in England and other countries in Europe, but it gives me great pleasure to state that I have not to record the death of many in America.

As regards the progress of our literature it seems to be rapidly increasing; for instance, in Chicago we have a weekly and also a fortnightly published in the interest of our art.

In Europe the governments take an interest in photography that is not done in this country. The King of the Belgians has invited a congress of photographers to assemble at Brussels to take into consideration the advisability of greater accuracy in the use of terms and uniformity with regard to photographic dimensions.

In England the Photographic Society of Great Britain has accomplished something on this subject by establishing standards for screws and flanges.

It seems to me it would not be inappropriate for this Association to take steps to be represented at the congress to be held in Belgium. Whether or not the government of the United States has been invited to take any part in the coming congress, I am unable at present to furnish any information. I know that other governments have. We are certainly interested as much as our European brethren in the accuracy and use of all terms connected with our profession.

Dry plate photography, together with the rapid increase in the number of amateur photographers, has caused the manufacturers of all kinds of apparatus to bestir themselves to endeavor to produce the most portable, elegant and useful apparatus. During the past year many improvements have been made which are of value to us all.

Every year the artists (the painters, I mean) are becoming more closely allied; the portrait painter finds it difficult to get along without the assistance of the photographer; and I find that the more a painter knows of photography the more willing he is to leave his sitter in the hands of the photographer to light and pose his subject; he is more willing to look on and content himself with a few suggestions only, knowing that the good photographer understands the effects that can be obtained under his own skylight better than one who knows nothing about it.

I am satisfied that the demand for photography in all its branches is on the increase and will be so.

Lastly, but not least, of the improvements that can be recorded during the past year, is the great progress in illuminating the dark room of the dry plate worker. I most thoroughly endorse Mr. Debenham's system of orange and green glass as a means of satisfactorily lighting the dark room. (Applause).

The PRESIDENT. Mr. J. Traill Taylor sent me his resignation as a member of this committee. I replied that we regretted exceedingly his retirement, and asked him to make an individual report. I was not aware that he had complied with my request until I received a letter from him yesterday saying he had sent a report which, as I said before, will be received to-morrow. This is explanatory of the remark of Mr. Gentile as to Mr. Taylor's report. You have heard the gentleman's able and interesting report on the "*Progress of Photography*," what will we do with it?

A MEMBER. I move that it be placed on file.

The motion was seconded and carried unanimously.

MR. OWEN HOWE, of Troy, O. I would recommend that the vote of thanks of this body be extended to Mr. Gentile, and that a copy of the same be sent to the photographic journals for publication.

The motion was seconded and carried unanimously.

The PRESIDENT. It seems that the next in order of business is the report of the committee on the nomination of officers for the ensuing year.

A MEMBER. Beg pardon; I think the Executive Committee's report comes next.

The Executive Committee's report was read and a motion that it be placed on file was adopted unanimously.

The PRESIDENT. I trust, unless it is quite necessary, that members will keep their seats a little longer. We shall be very expeditious in our business. You have heard the report of the Executive Committee. What will you do with it?

MR. GENTILE. I move that it be accepted and placed on file.

The motion was seconded, and carried unanimously.

MR. JOSHUA SMITH reported on the Fitzgibbon testimonial.

The PRESIDENT. You have heard the report on the Fitzgibbon testimonial. What shall be done with it?

It was moved that the report be accepted and the committee discharged.

The motion was seconded and carried, and the committee discharged.

The PRESIDENT. The next business is the appointment of a committee for the nomination of officers, and, as I suppose, to include the nomination of a place for the next meeting. Is that not so? I am now informed by Committeeman Ryder it is not usual to include the place of meeting in the report of the committee. A separate committee will be appointed for that purpose, and I name on that committee Mr. Carbutt, of Philadelphia; Mr. Hesler, of Chicago; Mr. Carlisle, of Providence; Mr. Motes, of Georgia; and Mr. McMichael, of Buffalo, N. Y. This committee is to report to-morrow at the morning session. The next in order is miscellaneous business. If any one has anything to say, let it be presented now.

MR. WEINGARTNER. Mr. President, I have a report here to the effect that the rules regarding eligibility of members and the payment of dues be arranged differently, and I move an amendment to the constitution which reads—"Strike out Article 2, Section 2, that any person, not an employe, desiring to become a member of this Association, will be admitted by paying into

the treasury \$3 00 as initiation fee, and the further sum of \$2 00, which shall be paid annually before the adjournment of each annual session. Employes desiring to become members shall pay for initiation \$2 00, and for dues \$1 00 per year as above."

Strike out the first five lines of Section 3, Article 2, and all of Section 4, and insert as follows: "Any member failing to pay his dues on or before the day of adjournment of each annual session shall have his name stricken from the roll of this Association, and can only become a member again by paying the initiation fee, as if he had never before been a member." Now, gentlemen, I think this amendment to the constitution had better be adopted, and it will be brought up to-morrow morning for further consideration.

The PRESIDENT. The constitution prescribes that that document may be altered or amended by a three fourths vote of those present, notice of which is to be given one sitting before it is voted upon. Any other miscellaneous business, gentlemen? It seems to be rather quiet other than the sound of the hammer outside, which indicates that something is going on. In prayer-meetings when there is a lull, which sometimes occurs, some brother is called upon to tell his experience or make a confession. I suppose no one here has a confession to make, so will some brother tell his experience.

Dr. GARRISON, of Chicago. Inasmuch as numerous delegates and visitors here would like to see the exhibition, I think it would be well to adjourn until this afternoon. I therefore move that we adjourn.

The PRESIDENT. Before that motion is put it would be necessary that the regular order of business should be changed. If it is so desired we will do it at this time. The order of business is prescribed in the By-Laws. If that order is changed it will be necessary for us to make a motion to that effect.

Dr. GARRISON. In making the motion I understood you had passed through the regular order of business.

The PRESIDENT. We have not passed

through the regular order of business. We have arrived at that point where we attend to miscellaneous business. There is also the President's address and report.

Dr. GARRISON. I don't care to interfere with the regular proceedings of the Convention.

The PRESIDENT. I think there is very little miscellaneous business to come before the meeting this morning. If so, it will be attended to later, and there will be no afternoon session. It has been so decided by the committee. We will attend to what business we can this morning, and then take a recess this afternoon, in order that we may look around and get acquainted. Preparations are being made for some one to demonstrate on this platform here behind me. I judge by the sound it is not completed yet, though it may be later in the day. If so, there will be some demonstrations on it this afternoon by volunteers. I am proceeding with business now, because I do not understand that the motion to adjourn was seconded. The motion to adjourn is always in order, but I do not, in this instance, understand it to be approved.

Dr. GARRISON. Has the committee decided that there will be a further session this afternoon? If so, I should like to know, so that we can make arrangements accordingly.

The PRESIDENT. The next meeting will be to-morrow morning at 10 o'clock.

Secretary WEINGARTNER here announced the details and arrangements for an excursion of the members of the Association to the Zoological Gardens.

The PRESIDENT. Is there any other business?

Mr. POOLE, of St. Catherines. In view of what has been stated by our Secretary, would it not be advisable to proceed with the business as far as possible, or eventually there will be a great waste of time. I therefore suggest that we have the President's address, if he is willing to give it at this time.

The PRESIDENT. I am ready.

A VOICE. Well; go ahead.

The President then read as follows:

THE PRESIDENT'S ADDRESS.

Ladies and Gentlemen of the Photographers' Association of America :

It would be an assumption on the part of the presiding officer, and an act wholly unwarranted by the necessity of the case, to enter into any detailed statement of the condition of this Association, or to devise or advise any particular course of action on the part of the members.

The various interests or requirements are matters as well understood by most of you as by myself, and so I have omitted doing any more than to comply with Section 8 of the By-Laws, which prescribes that the first session shall close with the President's annual address.

The Convention at Milwaukee, last year, was the first one of the Association I had the pleasure of attending. That meeting, under the direction of my able and distinguished predecessor, Mr. Beebe, was regarded as the most successful and interesting in every particular of any previously held by the society, and naturally I have looked upon the management of it as somewhat of a pattern to be followed in our present business session.

Those of you who were so fortunate as to be present at Milwaukee will remember how expeditiously the business affairs of the Association were conducted, and how little of dissension and dissatisfaction was apparent in those taking part in the discussions and proceedings of that meeting. I may be permitted to hope that our present deliberations may be characterized by the same harmony and absence of strife and animosity that prevailed at that time.

You also remember how little of your valuable time was consumed by your President at the Convention of '83. Even his annual address detained you but little more than five minutes, and yet covered all necessary grounds, except, possibly, a display of his ability to prepare an elaborate address, which all would concede him capable of doing.

It will be my endeavor at this time, with your co-operation and assistance, to have brevity and dispatch as prominent features in our proceedings, as was then apparent.

The constitution enjoins upon the presiding officer the duty of making an annual report on the progress of the society during the year past. In compliance with that requirement I

submit for your inspection and consideration the elaborate address (more eloquent than any I can utter) displayed upon the screens in the adjoining rooms and corridors and in the manufacturers' and dealers' department upon the other floor in this building.

While that display may not in quantity greatly excel all former exhibits of this Association, you will all admit that in quality it has not been equalled by another heretofore shown, and I am safe in saying we may indulge in justifiable pride in regarding this as the finest example of the possibilities of our beautiful art ever made at any time or in any place; and I feel like congratulating you on the evidence here presented, not that we have achieved the end desired, or arrived at the point where the photographic stage puts up; but that we have gotten a start that in the end may accomplish results that shall entitle the photographers of America to be ranked as artists pre-eminent above all others.

The time has been when the profession of photographers was not held in as high esteem as that of statesmen or expounders of the law—in fact, to be a photographer then was not regarded as any great credit to a man, and the occupation entitled him to the distinction of being set aside as being of small consequence.

But, gentlemen, we are able to discern in the present status of the art a condition of things quite different from what was obtained at that time. Photography and photographers are to-day accorded the high rank to which it and they have been elevated by the energy and intelligence of such men as I see before me on this occasion, and whose works are now displayed in the adjoining corridors.

It is well for the profession that men experienced in the occult qualities of photographic and artistic conditions—men of energy who are abreast of the times in every way are to-day engaged heart and soul in lifting photographic science and photographic art to the importance to which they are entitled. For this condition of things, so apparent all about us, the P. A. of A. is entitled to a large degree of credit. While we, as a national association, would not undervalue what has been done by state and local societies, we may feel a just pride in contemplating the amount of good the national organization has been instrumental in accomplishing.

Let us hope that this Association will in the future be able to advance the interest and welfare of all connected with it to such an extent

that every reputable photographer in this broad land will be proud to be enrolled as a member.

There is one matter of vital importance to every photographer, which I regret the necessity of alluding to at this time—a matter that concerns the welfare of all more intimately than anything else connected with photography—I refer to the subject of prices. It is lamentable that there are those in our profession who, by necessity or greed, feel compelled to put a price on their own productions that will barely pay for material and labor employed. Unfortunately, too, the evil is not confined to those commonly denominated “Cheap Johns.” If such were the case, and cheap prices always meant cheap pictures, photographers of ability could well afford to pay no attention to this troublesome matter. In some localities this is doubtless the case, but many of us have reason to know and regret that work of an excellent, if not superior quality, is made at prices which these men are pleased to say “defies competition!” This fact, that good work made by men of considerable ability is sold at such ruinous prices is the source and sum of all the price troubles.

Cheap pictures as such are not by any means an unmitigated evil, if indeed they are not an actual benefit to the better class of photographers; and really, too, such productions are a necessity with the masses who would be deprived of these luxuries if compelled to pay extravagant prices. The necessity is that there should be a correspondence between price and quality, and the effort of this or any society should be to promote that equality rather than to stimulate strife and bitterness among those engaged in the business.

We cannot, if we would, ignore the fact that photographers, and even those who do not think exactly as we do, have rights that we are bound to recognize and respect.

It should be remembered, too, that since they are possessed of such rights, we are, and will continue to be, powerless to coerce them into our way of thinking and acting.

It is indeed a matter for serious consideration, and I fear no satisfactory solution of the difficulty will be reached in the near future—certainly I have no scheme or suggestion to offer, other than what I have already intimated, that a conciliatory course in opposition to such measures as I have latterly seen advocated by some of our photographic publications should be pursued. We may organize

into societies and committees, and legislate low prices out of existence on paper, but the evil will still be as prevalent as ever, while the perpetrators of such will smile at our futile efforts to regulate their business and establish their prices.

What action, if any, this society should take is for others who may possibly have clearer ideas than your President to suggest or advocate.

It is apparent to my mind that while there is no subject of equal importance, there is none more difficult to compass. At any rate no one likes to be driven. Men are more easily won by argument and appeal to their convictions of right and justice, or at least to what would appear to be their own interest, than they are to be forced into compliance with the views of others.

It is hardly necessary that anything should be said at this time relative to the subject of gelatine plates, not that the subject has lost any of its importance or interest to practical photographers, or that it is so familiar to all workers that nothing new can be said or suggested. On the contrary, it appears to me that there is no subject attracting more attention at present than that of dry plates.

While we have learned much of the advantages of this process, we are still far from having discovered all its possibilities. There are those who are still reluctant to concede its superiority over the wet process, many yet contending that the crispness and vigor of the old method is not attainable with the new. It is noticeable, however, that most of those entertaining this view are the ones least familiar with the process. And it is doubtful if any who have adopted the dry plate and become familiar with it have ever given up its use and returned to the old bath and collodion.

Its advantages are so many and its abandonment would be such a long step backward that no photographer would think of taking it. In spite of all opposition it is evident the gelatine process has come to stay, at least until something possessing better advantages takes its place.

But having promised that our proceedings should be characterized by brevity and dispatch I shall not now proceed to violate that agreement by keeping you longer than to express the hope that every member of this body will be actuated by a desire to do all in his power to promote the welfare of the national association, realizing that in doing so he is working

or his own interests and the interests of his fellow workers.

The PRESIDENT. To-morrow we shall have an address from our friend Ryder, on the business management of photography. It will be the most interesting document presented at this Convention. I promise you that in advance.

Mr. POOLE, of St. Catharines, Ont. I assume to say, Sir, that the photographers of Canada are seeking to form an association similar to, though of course very small as compared with this. Our first meeting will be in the second week of September. We expect then to have a very creditable exhibition of photographs in the city of Toronto, and I am empowered by the officers of that Association to extend to each and every one of this Association an invitation to visit us and take part in our meetings. We shall be very happy to see all who can come there in the second week of September.

A MEMBER. We will all be there.

SECOND DAY.

CINCINNATI, July 30th, 1884.

The Convention was called to order by its President, Mr. Kent.

The PRESIDENT. The first business in order is the report of the nominating committee; if that committee is ready, we will have their report. Mr. Carbutt is chairman of that committee; is he present? If he is not present Mr. Carlisle will please come forward.

A MEMBER. I think Mr. Carbutt is not ready to report, because a few minutes ago I saw him and he was then just getting his list ready.

The PRESIDENT. We will defer that for the present, and proceed to miscellaneous business. Anybody who has anything of that description to offer has now an opportunity.

Mr. BLESSING. Mr. President and gentlemen of the Convention: Last year I had the honor of addressing you a letter on the subject of prices, which was read and

discussed at some length, but unfortunately my views and suggestions were misunderstood, and the discussion took the wrong direction. I was understood as wanting the Convention to fix the price to be charged for photographs. If first-class cabinet photographs are worth eight or ten dollars per dozen, let us say so. If second-class photographs are worth six dollars per dozen, let us tell the public so; and if another class of photographs can be made honorably and honestly for three or four dollars per dozen, let us call them third-class, and tell the people so. But if good work cannot be made for one dollar per dozen, one dollar and a half per dozen, two dollars per dozen, or two dollars and a half per dozen, let this Convention say so in terms not to be misunderstood by the public, so that everybody will know what estimate to place upon the productions of the "Cheap Johns," who are so lavishly advertising the best work for one dollar a dozen, and absolutely humbugging many intelligent people into their places of business. I have prepared a set of resolutions embodying my ideas concisely, and ask this Convention to adopt them or substitute something better:

"Resolved, By the Photographic Association of America in convention assembled, that first-class cabinet-size photographs cannot be made for a less price than eight dollars per dozen; second-class not less than five dollars, and third-class not less than three dollars per dozen.

"Resolved, That the price charged by the proprietor of any gallery shall class his work.

"Resolved, That the photographer who works for prices less than those quoted is compelled to use cheap material, employ cheap and unskillful assistants, and will give his patrons inferior and unreliable work."

Mr. President and gentlemen, brother laborers in the field of art: Do not leave Cincinnati until you have put yourselves squarely on the record in regard to prices. For the evil is growing, spreading and widening, and will continue to eat as doth a cancer, until photography becomes a by-word and a reproach. We all know that silk can be had at fifty cents a yard, and

also at five dollars a yard, and it is no hard matter for the ladies to understand which is the best. Let us make the price of photographs as easy of comprehension. If my competitor next door makes photographs for half what I am charging, and my patrons ask why I cannot make them as cheap, I have to make the best defence I can. In doing so, if I make the case strong they condemn me for it on the ground of being uncharitable and unneighborly. But let the Convention sanction a basis for prices, and then each one of us can make such local use of it to suppress the fast-widening circle of cheap pictures as he thinks best. Mr. President, if all of us were in your position, whose work stands Extra No. 1, then there would be no necessity for urging this Convention to take action on this matter. But come with me to Baltimore, and see the pitiable condition of photography to-day, brought about by one man through spite. But I will not harrow your feelings by reciting the condition of our fair art there. Suffice it to say that prices range from one to two and a half dollars for cabinets in the majority of the galleries. You all live in glass houses and are as liable to suffer from the same cause as we in Baltimore; therefore, I earnestly entreat you not to let this opportunity pass of putting your condemnation upon the ruinous practice of cutting prices.

Mr. KLAUBER, of Louisville. Mr. President, I have just arrived this morning, and would like to be excused by the Convention for not being here on time, being one of the officers. I am informed that some changes are to be made in our law, so whoever has that in hand I would like to make one suggestion, which I find very necessary for our organization. First that we elect a permanent secretary for the Convention, and that the executive committee, whoever they may be, shall have power to appoint a local secretary. Now we have but one, and at the last meeting we had a great deal of trouble to find a secretary who lived in Cincinnati. Now a permanent secretary, who is a member of the executive committee, could live almost anywhere; then if we get

a good one we could keep him. Now you have to change that officer according to the location. I believe if you give the Executive Committee and President power to appoint a secretary to do the local business, you will get along a great deal better. I make that suggestion, as we need two secretaries—one to attend to the hall and the other to the Convention. That is something that I have been thinking over a great deal. I see there is some resolution here in regard to changing our law, which I think we will have to do. It is very necessary. I will speak about that hereafter.

The PRESIDENT. If any one has any remarks to make on the subject he will have an opportunity to be heard. There is an opportunity while we are waiting for the report of the committee on nominations for any gentleman to propose any business that is in hand; I shall be glad to hear from anybody. No one responding, the President said: I propose that the gentlemen all put on their hats—that is the fashion in a Quaker meeting—and you must all be careful not to speak until all the others have been heard.

Mr. GENTILE. Mr. President, directly after the adjournment of the last meeting I received a cablegram from Mr. H. Baden Pritchard, sending his congratulations to this Association. As it has never been made public, I should like to take this opportunity of doing so. Mr. H. Baden Pritchard, who recently died in England, was the editor of the *Photographic News*, published in England, and I think that inasmuch as he was a gentleman very prominent indeed in photography—I imagine that nearly every member present has read some of his works—we might make some remarks of condolence with regard to his decease. I think it would not be inappropriate for this Association to draft some resolutions in regard to it.

Mr. CARLISLE. The only way that Mr. Klauber's suggestion may be acted upon is by an amendment to the constitution, and it may be necessary for Mr. Klauber to make this amendment at this session so that it may be acted upon at the next.

The PRESIDENT. That is his intention.

Mr. BANKES, of Little Rock. Mr. Klauber has stated the change in our law which was contemplated. I would like to ask if any action was taken.

The PRESIDENT. No action was taken yesterday in regard to the matter. We took action in regard to some other matters. The resolutions of yesterday can be read this morning; they will be read in due time.

Mr. BELLSMITH. I move that the President name a committee to take in hand the alteration of the constitution and report at our meeting to-morrow.

The PRESIDENT. I understand that no committee will be necessary for that. There will be a resolution introduced this morning which will lie over until to-morrow for action. A resolution to alter the constitution must be introduced at least one session before it is voted upon; that resolution will come up this morning.

Mr. KLAUBER. Mr. President, I coincide with the last speaker. If you want to change any laws, and wait until you have resolutions here and talk about them, it will take more time than you have to spare. Therefore, it would be better to have a committee appointed, say of three, to whom all resolutions and our present by-laws and constitution should be referred, with the power to bring in by to-morrow such things as they deem proper to be revised; let them go into the hands of a committee to see in what form they can bring them here so that they come up to our ideas of a constitution, and lay them before us in proper shape. If resolutions are introduced here in that way this gentleman will have one and that another. In all regulated bodies the first thing they do is to appoint a committee on by-laws. They have power to prepare what they think is necessary; and then the body here can resolve itself into a committee of the whole, and if it is all right, pass it. Otherwise you get a resolution here, and another there, and nothing to work upon. A committee of three can do a great deal more than if you bring it before the whole body; therefore, I move

that the President appoint a committee of three to prepare an amendment to our by-laws and do whatever is best for the future of our Association.

The motion was seconded

The PRESIDENT. The motion that a committee of three be appointed by the chair to revise the by-laws has been moved and seconded and is open for discussion. Any remarks? You have heard the resolution, and as many of you as are in favor of having this committee appointed will signify by saying aye; contrary no.

The motion was carried.

The PRESIDENT then appointed as a committee to revise the by-laws Mr. E. Klauber, of Louisville, Mr. Bankes, of Little Rock, and Mr. Bellsmith of New Jersey.

The PRESIDENT. I trust that this committee will be prepared to report to-morrow morning. I also wish to appoint a committee in the matter spoken of by Mr. Gentile, in regard to H. Baden Pritchard. I will appoint Mr. Gentile a committee of one to draft resolutions on the death of H. Baden Pritchard, to be presented to this meeting to-morrow. I notice in the room a distinguished gentleman, Mr. A. L. Henderson, of England, a name you are all familiar with. We shall be glad to have Mr. Henderson come forward to the platform. I notice present, too, Mr. Edward L. Wilson, who will also have the kindness to come to the platform. I have now the distinguished honor to introduce to you Mr. A. L. Henderson, of England.

Mr. Henderson, having come upon the stage, addressed the Convention as follows:

Mr. President, Ladies and Gentlemen: I consider myself very highly honored indeed to have such a reception from you. It is certainly more than I expected when I left my shores to come to your great country here. I must say that there are several things in connection with your country that I do not like. It is too large for one. I do not like your mosquitoes at all. My wife doesn't like them either; she is confined to bed this morning from the effects of mosquito bites. I am sorry to say that

I am not a photographer at all; my forte is more in the chemistry of photography, and I have done the best I could to forward photography by that means. You are, no doubt, all familiar with the articles that have appeared from my pen in the English journals, and have been often copied in the American journals. I am here as the representative of an English society, the London and Provincial Photographic Association. I came over to make a short visit, and while I have been here I have been very courteously treated by your citizens. I am no speaker, I am a photographic chemist, as I mentioned before to you. I thank you very much for allowing me to visit your society here, and I shall go home with a very pleasant recollection of the great progress that I have seen here.

The PRESIDENT. I will inquire if the chairman of the committee on nominations is here, Mr. Carbutt. While we are waiting for that committee we shall have the pleasure of listening to the address of Mr. Ryder on the subject of the "business management of photography."

Mr. Ryder then came forward and read the following address:

On the Business Management of Photography.

MR. PRESIDENT, LADIES AND GENTLEMEN:

As a rule, men think well of themselves and don't care to be told what they already know. There is probably not a man here who doubts his ability to run the photographic business. You will please understand, therefore, that I feel embarrassment in so delicate a matter as undertaking to tell you you don't understand your business, and if you will only listen I will tell you all about it. I do not take such a liberty, but if you will tolerate me a few minutes I will give you my convictions upon the subject.

The first necessary requirement—the foundation stone—is a thorough knowledge of every department of the work. An intelligent understanding of one's business is solid capital. The more of that element a man carries the greater is his strength. As we have no established system of apprenticeship, no regular course of study or practice of our young art, the learner is dependent upon a hap-hazard

chance, his aptness at catching an idea, with a natural handiness in taking to new work, a taste for art, even in a small way, prove his good friends in grasping photography.

Considering the many intricate points in chemical requirements, the judgment necessary to be exercised at every stage of the work, the many handlings and processes which depend one upon another and all necessary to the proper production of a finished photograph, it is really a matter of surprise how successfully it is accomplished with the small chances the workman has had for acquiring knowledge. I say this believing the instances where photographers are really educated in the art-science of the profession they claim to be masters of, are very few. I hope the time is near when regular schools of photography will be established and sustained in this country, where the learner may have the benefit of good teaching under competent professors, where study shall be necessary, that he should be compelled to pass a rigid examination in chemistry, optics, physics, light, lighting, composition and drawing, before he should be entitled to a diploma, which should be his voucher for competency.

Then we could expect intelligent skill in our employes, and the public could feel assured they were being served in a proper manner.

Truly knowledge is power. It is recognized and respected by the learned and ignorant alike.

The colored servant of a surgeon, explaining why his master charged twenty-five dollars for the performance of an operation in surgery which took but ten minutes to do, said he charged five dollars for the work and twenty dollars for the know-how.

In all departments of the arts, the sciences or in mechanics, a man of recognized high attainments commands the confidence of his patrons, and the right to be well paid for his services.

To fit ourselves in the best way for the pursuit of our art, which is becoming yearly more an art, and more closely allied to science, buy books, subscribe for journals, magazines and papers upon the subject; make your collection of photographic literature a special library, then make its acquaintance, the more intimate the better. In this way you become master of the requirements of your business, which is a rock-bottom foundation upon which you may build with all confidence and security.

Educate your help, teach them in the little

points and in the greater ones, train them to your ways, give them your ideas and listen fairly to theirs—you may sometimes get the best end of the bargain in such exchange.

Make a collection of studies and encourage yourself and your operator to frequent examination of them.

I have large specimen books, the leaves of which are of tar-board 22 x 28 inches. To these tar-boards on both sides I glue mounted photographs, the best examples of work I can find. I purchase and I exchange, I have the work of friends and of strangers. It is a valuable collection for reference. They are kept where my operator has constant access to them, and among them he can find almost every style of lighting and posing, as well as the peculiarities of many noted operators.

A man who takes interest and pride in his work likes to know how he stands as compared with others; it is a spur to him, and keeps him on the alert.

Next in value to superior quality in your productions is a safe and careful system in all the various departments, from writing an order for a sitting to delivering the finished picture into the hands of your customer. Such system should be observed. The soul of that system should be order and cleanliness.

There may be to some an affectionate interest in collections of antiquated relics of good old days, whose dust-coated and deep-stained fronts attest to long years of service, and certify to the claim of old stager. Many a well-meant operating room harbors in its corners and along its side-walls collections of crippled head-rests, rickety camera-stands, faded chairs with long-fringed upholstery, broken balustrades, old camera boxes, etc., which are in no sense ornamental or advantageous.

It is a mistake to make a museum or a junk-shop of the operating room. Remove the old trash, give the scrubbing brush, the paint pot and the whitewash tub a chance. If there be a worse smell than the atmosphere of a justice's office, it is the musty odor sometimes encountered in a slovenly kept photograph gallery.

The man who satisfies his conscience that he cannot afford to expend money in thoroughly renovating as often as once a year, and re-furnishing when needful, is a poor manager, and works against his own interest. Nothing commands more prompt respect than tidiness. A seeming of prosperity soon brings the reali-

ty; people like to patronize a prosperous man, and naturally avoid a poor or an unfortunate one, all which shows an air of thrift; and systematic order should be practiced and enforced.

Keep your show of specimen pictures fresh by frequent changes. Your customers will visit you oftener if you have new attractions. They will take pride in you and make your establishment one of the places to be visited by strangers and their visiting friends, among whom you will find good customers.

How to treat with customers. Here comes the place for exercise of judgment, for real generalship. To be polite, attentive, genial and at the same time firm in adhering to safe rules for your own protection is a difficult thing to do, yet it can be done. A correct start saves often misunderstandings which are to be avoided by all means. It is a great mistake to have serious differences with your patrons; you must remember that great consideration is due your sitter. Perhaps you sometimes sit yourself and find you are whimsical and exacting; you like to try again, for some reason you can't quite explain. Perhaps when you go to your tailor you are not at once suited with the fit or hang of your coat; his telling you it is all right does not quite convince. Remember these things and be patient; you can make another sitting as quickly as you can make an argument. The sitting would perhaps convince them, your argument would not. Make your prices sufficiently high to justify the use of a number of plates, and a half hour's time if necessary. You can afford this occasionally. If the exactions of your sitter be too great you are entitled to charge for extra service; state it pleasantly but firmly; sugar-coat your words where the subject is disagreeable.

In bargaining or arranging the details for a sitting, have everything clear and distinctly understood. If additional styles beyond what is described in your order are asked for, then is the time to mention the additional price, and to stand by it.

It is the good-natured follows who can't say no, and who in their anxiety to please the dear ladies get most imposed upon.

It is not an uncommon thing for a lady to have a dozen dresses and as many toilettes photographed before an order is given to finish. She gratifies her curiosity as to how they will take and the more sittings she has the more undecided she is which to order. Is the lady to blame? By no means—the man has

helped her to impose upon him and is helping to establish the custom of having his neighbors imposed upon also.

I believe it entirely fair to make for all sitters two good negatives, differing in position, that they may have a choice. If they desire more plates used it is very proper they be required to pay extra for them, particularly should sitters be made to understand a change of dress or toilette means an extra charge for new sittings.

Don't be too obsequious to your aristocratic customers and domineering with those of modest means, who are generally sensitive. Be polite to all. Remember where you get one dollar from the capitalist you get ten from the middle class, the working people. Be prompt as possible in finishing and delivering your work; make no promises on that point except you are sure of keeping them. Impress your customers with the fact that your word is to be relied upon.

Never put off the securing of an order for another time; clinch it on the spot.* It is never too late in the day to make a sitting—that is to take a man's order for a sitting. Many a time have I written orders for sittings by gaslight and given my client into the hands of the operator. With his money in the till he is sure to come for his proof in the morning and well satisfied to try again on learning last night's effort was not entirely a success. Had I told him it was too late in the day and advised his coming again, I should probably not have seen him more. With a desire for sitting while his mind was upon it he would probably try my next door neighbor, who with more enterprise than I had shown would gobble him.

The time to take money is before the sitter goes into the operating room; particularly should this apply to strangers and parties regarded doubtful. All photographers who fail in this important rule are practicing an injustice upon themselves. Prices for photographs have become greatly demoralized. Many of our prominent and good men have been led or driven, I might say "clubbed," into this great wrong. I will venture to assert that four in every five who have fallen into low prices are ashamed of it, and would be glad to get back to more respectable figures and a more respectable standing among their fellows. Low prices are in every way degrading; the work is carelessly made, the standard of excellence is lowered, in fact, is lost; ambition sinks to in-

difference; enthusiasm is killed. The work becomes drudgery, devoid of interest or pleasure.

It is an injury and an insult upon our young art. It is a shame to the men who have helped bring it about.

Is there a remedy? Let us see. In all places where photography is practiced are men and women who want the best that can be made, and will pay good prices for what they believe to be superior work. It is possible for photographers to invest their business with a tone and dignity that will be recognized by the people. There are many prominent instances to prove my assertion. This good city of Cincinnati stands at the front as an example to all other cities and to all other photographers of this country. The gentlemen who practice photography here are not devising schemes for decorating the fences with the skins of their neighbors; they are so wise as to be on the best terms with each other, both in a business and a social sense; they are quite willing each other should live and thrive. They are prosperous; they are honored.

What is possible to Cincinnati is possible to all other cities. I think it is a fitting time and place to bring this fact to your attention.

The curse of our business is this curse of low prices. There is no good reason for it. There is no wisdom or advantage in it. It is a wrong to yourself, your neighbor and to the art you should be proud of, and which you should feel bound to protect.

Year by year this blotch is growing blacker and deeper. In many instances photographs are sold at prices which show that it is not possible for the proprietor to pay his help or his stock bills and make a profit on his work. This means folly, ruin and death to photography as a means of securing a livelihood.

Reform must come. I heard when a child that the city of Rotterdam, in Holland, was the cleanest city in the world, and the way it came about was from everyone scrubbing his own door-step. I have always remembered it. My friends, the way to bring about reform in the abuse we are talking of, is not to wait for your neighbor, but to commence scrubbing your own door-stone.

If you are a skilled and competent photographer straighten up and assert yourself! Put your establishment in proper train for an advance to a higher grade of work and a higher scale of prices. The public recognize your progress, will follow you; if your neighbor

will follow also, so much the better for you both. If he will not, you have by your act proved yourself his superior, and will hold the advanced ground you have taken. Elevate your art and it will elevate you. Make your prices high and make your work worth all you charge for it.

This, gentlemen, is the road to success. Look about you and prove its truthfulness. The men who have been fortunate in our business have been faithful to the course I have here laid down.

MR. BELLSMITH. Mr. Ryder has struck the key note, I think, on the subject of greatest importance before this Convention. There are fifty thousand photographers in this country whose eyes are turned towards Cincinnati, and who are depending on this Convention for an action that will amount to something; I therefore urge upon the Convention to treat the subject as one of importance, which everyone must recognize that it bears towards our business; and as the time seems to be opportune at present I move that the subject be taken up for discussion; that all the arguments be concentrated, and that as much influence may be brought to bear upon the subject as possible.

THE PRESIDENT. There is a motion made; is it seconded?

A MEMBER. I second the motion

MR. BELLSMITH. I wish to move that the subject of prices—the discussion of prices—be taken up now; that all arguments that may be made may be concentrated in this session.

THE PRESIDENT. The motion is, as I understand it, that the subject of prices which has been discussed in the paper given us by Mr. Ryder, of Cleveland, be continued at this time. Anybody who has any ideas to present upon that subject will now have an opportunity of expressing them. As many as are in favor of it say aye.

The motion was carried unanimously.

THE PRESIDENT. There is another matter before the Convention, and an opportunity will now be given for it.

MR. CROSS. The subject before the house is one of the utmost importance to

all; it is one that we are all interested in. I think this Convention should show its position on the question at this meeting. A man should raise his price to such a figure as will enable him to turn out good work and make a fair profit. I move that this Association put itself on record as favoring an advance in prices all along the line. It is a move in the right direction. One man cannot do it alone; but if the Society makes a move it will begin. Let us make the start, and move to advance the prices, I move that a resolution be introduced that we all raise our prices.

THE PRESIDENT. A motion is made and seconded that it is the sense of this meeting that every member shall do all he can towards the elevation of prices; that is understood, but it is well enough to put it in the form of a motion.

MR. HESLER. We know that there are lots of men in the profession who believe that their work is not worth more than they charge for it; they have no good opinion of themselves and of their work. If one puts his prices at two dollars the public will pay for it; if he put his prices at a lower figure and gives them a chromo in the bargain, he thinks that is all his work is worth and the best he can do. Now all the resolutions we can offer here will do very little towards lifting the thought of those men; the point is for every man to constitute himself a committee and appeal to the world through his prices, through the quality of his work, and through his own estimation that his work is worth all he charges for it; not to give a premium to those who buy his productions, but charge a price that will pay for the work and leave him a fair and reasonable profit.

MR. CROSS. What Brother Hesler has stated is true. We want to raise the prices; we ought to show that that is the feeling of this meeting. It will help; it is a little start that points in the right direction. I move that the sense of this meeting is that every one raise the prices to the best possible figure.

THE PRESIDENT. There is an opportunity for further remarks.

Mr. BROOKS, of Mississippi. I am a very small man, but I have some very large ideas. I am also a very poor man, but I have some very rich relations. I want to state to this Convention that I feel that this honorable body of American photographers should not condescend to allow a man upon the floor of this Convention who would make photographs at the pitiful sum of a dollar and a half a dozen, cabinet photographs. I don't wish to detain this Convention or to bother you; I feel too little; but I want to put a flea in the ear of some of those tin-typers here, just one. I know there are a great many men who make their living by making tin-types; I make a great many of them; it is perhaps a third of my business, although I don't pretend to prostitute it. I am sorry to say that most of those who make them make them so cheap that it degrades their profession; this is as true of New Orleans as it is of Boston or New York. To those tin-typers who are making these tin-types for twenty-five cents apiece I would say to you, that I get fifty cents for every one that I make, and I have made a great many of them at fifty cents apiece, and not at twenty-five cents a dozen, and for a quarter, but fifty cents each. I speak of this because I know it to be somewhat of a surprise to some of the Northern and Eastern men in that line of the business. I very often have a customer come into my office who wants four or five or six of these tin-types. I get two dollars for four; and so you see that you can get good prices if you demand them.

Mr. BLESSING. From the discussion that has ensued I have not seen anything that covers the ground as well as my resolution. Let this Convention put itself squarely upon the question of prices, and say that third-class photographs cannot be made for less than three dollars a dozen without giving your patrons unreliable work. It is a square proposition, and one that cannot be misunderstood. Let us take no doubtful action on the question of prices; and if we say that three dollars is a fair price for third-class work, and cannot be made for less, it covers the ground. We

all know that silk can be bought for fifty cents a yard and for five dollars a yard, but we all know the difference. Let us make our prices as easy of comprehension.

Mr. INGLIS. I think that Mr. Ryder's address should be published in pamphlet form, and I would move that the members of this Association each contribute fifty cents or a dollar, and send the pamphlets to the fraternity for the benefit of those who are not here.

The PRESIDENT. There is a resolution before the house which I trust we shall dispose of in a few minutes.

A MEMBER. I hope that the resolution of Brother Cross will prevail, and I think it will help to establish a standard that we can go by.

The PRESIDENT. The question is called for, but it is a good way back, and I have forgotten what it is.

A MEMBER. I move, as an amendment to the motion that is before the meeting, that this Convention shall have this address to which we have listened printed in pamphlet form, not that it should not be printed in all the journals, and that we as an Association shall give it gratuitously to the photographers throughout the country, that they who have not been able to be here shall have the benefit of that address, which has struck the foundation, as he has given it to us to-day. Let us take the advice he has given to us here; let each one of us begin to scrub our own door-step and stand upon our own bottom; let every man assert his manhood and charge a price that is a living price, and see if he cannot do better in one year than he has done at this miserable price of a dollar a dozen.

The PRESIDENT. The amendment being in the line of the resolution I shall consider it in order. Is it seconded?

The motion was seconded.

Mr. RYDER. While I am deeply grateful to my friends who think well of the little thing I have written, I feel a little delicate about its being embodied especially in a pamphlet; it will go through all the journals, and every word that I have said is

as well known to every man here as it was before I said it. I am very sensible of the compliment, but I would be glad if Mr. Inglis would withdraw his amendment.

Mr. INGLIS. I will not withdraw my amendment. It is the best thing I have ever heard; I have never heard the subject discussed better. If we do what I propose in the amendment let the Association do it nobly. If you are not willing to give a certain sum for the benefit of this, contribute gratuitously and liberally, and let us not only have it published in all the papers throughout the world, but in pamphlet form, and bring ourselves to such a point that we may be looked upon as worthy men. At the present time photographers are a low, mean, contemptible set. This is simply plain language; you need not look into a dictionary for the meaning of the words, but it is the truth.

Mr. BLUNT. I think it will be a more proper course to subscribe one dollar to pay for extra copies of the *Philadelphia Photographer*, and have it distributed to all the "Cheap Johns" of the United States, and have it printed in that paper.

Mr. INGLIS. As against the remarks that have been made to the amendment I do not object in any way that all the journals should publish it, and if the journals are liberal enough to distribute it let them do so; but let us have it in the pamphlet form, and every photographer will have it and read it more surely than if he receives it in a paper.

The PRESIDENT. The resolution is that the able address, which has been delivered by Mr. Ryder, be published in pamphlet form to be distributed throughout this country; as many of you as are in favor of that say aye. The motion was carried.

The PRESIDENT. Mr. Wilson has a few remarks to make.

A MEMBER. We have only voted upon the amendment.

The PRESIDENT. The amendment in the line of the original motion has prevailed. I do not deem it necessary to put the original motion in this case; it is not required.

Mr. WILSON, of Philadelphia. Mr. President, I have enough material here to take the rest of the morning; but I will only take about four minutes. First, I have here a copy of the minutes of our last meeting, a present from the publishers of the *Photographic Times* and the *Philadelphia Photographer*. I have a motion to make that the Executive Committee take some means of notifying the public to witness this most magnificent exhibition of photographic work known in the history of photography, and that the matter be referred to the Executive Committee to advise and use all the means they can to get the people of Cincinnati here to see this exhibition to-morrow and next day; so that the world may know what we can do. This will be one great step towards the elevation of prices. First lift yourself; then your prices and the world will help you. The next thing I have is a letter of invitation. It is written to Professor C. F. Hines, one of our oldest amateurs and who to-day is conducting a school of photography at Cumberland, Maryland. The letter is from Charles R. Baldwin, President of the Mountain Lake Association, and is an invitation for the Association to hold its session of 1885 at Mountain Lake Park. Mr. Wilson then read the letter; also a letter from Prof. Hines. I now move that this communication be referred to the committee on location, or if not that, that when the reports of the committee on location is received, this courteous offer be considered. I have here a description of Mountain Lake Park which accompanies the invitation to the committee.

It was then moved and seconded that the invitation to Mountain Lake Park be discussed before the committee.

The PRESIDENT. The committee will please take this matter into consideration in fixing a place of meeting in 1885.

Mr. WILSON. One thing more and I am done. It is on the subject of prices. Those of you who may read the best magazine (!) cannot doubt the sincerity of the editor in the matter of raising prices, and to prove this further I have published a little pamphlet which I have brought with me on

this subject. It hits the thing on the head, and is intended to be a help to those who want to be helped. I believe if we could go around as missionaries, those who are here would confess that their prices are not what they desire. Our Brother Ryder has discussed the thing thoroughly, and this little pamphlet will follow it up. Remember that we are sick; let us begin to sweep the door-steps now.

The CHAIRMAN. I notice the chairman of the committee on nominations present. Is he ready to report? If so, we will have the report now.

Mr. CARBUTT read the report of the committee. The committee nominated for President, James Landy of Cincinnati; for Secretary, H. McMichael of Buffalo; for Treasurer, G. M. Carlisle of Providence; for Executive Committee, J. H. Kent, of Rochester and William Armstrong, of Milwaukee. Mr. Carbutt stated that they had a partial list of vice-presidents.

The PRESIDENT. The list of vice-presidents may properly be left over until to-morrow morning's session. Gentlemen, you have heard the report of the committee, what will we do with it? The matter has to lie over of necessity until to-morrow's morning.

A MEMBER. I see that there are only two names on the Executive Committee.

A MEMBER. I move that the report be received and the committee continued until to-morrow.

A MEMBER. I would suggest that the report be taken back and the committee consider what Mr. Wilson has told us.

The PRESIDENT. That is not necessary. Are you ready? The question is, that the report be received and the committee be continued. As many as are in favor will say aye.

The motion was carried.

The PRESIDENT. I would like to announce at this time that at three o'clock this afternoon there will be a group taken from the front steps of this building, promptly at three o'clock local time.

Mr. WEINGARTNER. As was announced yesterday there will be an excursion to-day

to the Zoo. The round trip tickets to the Zoo and admission will be thirty cents. The tickets can be had here at the table after the meeting, and we start promptly at four o'clock from this building. We can accommodate about four hundred on each train.

The PRESIDENT. Mr. Seavey has asked permission, and has received it, to make a demonstration of a subject on the platform to-morrow afternoon at 2:30. A gentleman asked me if there would be any demonstration to-day. The sun is on the platform and we shall be unable to use it.

Mr. RYDER. Ladies and gentlemen: In the matter of Mr. Seavey's demonstration to-morrow I will further announce that he has a special model, a very beautiful young lady, who will be draped in the Greek costume, and it will be a great treat to all to see the effects that Mr. Seavey purposes to show and produce at the time mentioned, 2:30. I hope that he will have a fine audience, as his demonstration will be something rather attractive and interesting to every one.

The PRESIDENT. Mr. Wilson, will you please state your resolution in regard to the matter of admitting the public to our exhibition?

Mr. WILSON. I did not make any.

The PRESIDENT. Will you make it as a resolution?

Mr. WILSON. I merely suggested that the Executive Committee do what they can to get the public here to-morrow or next day, either by advertising in the public papers or letting them know in some way that there is such a show, and let them come and see it. Yesterday I had a talk with General Goshorn, who was walking around alone, and he said he had offered to advertise at his own expense this magnificent and surprising exhibition we have here. Let the public come in, and let us pound the fact into their heads that photography grows, and that we are growing with it, and our prices will also grow.

A MEMBER. The object of bringing pictures to this exhibition is for the public to see them and know what photography is

and can do. If we charge them twenty-five cents, but a very few will come to see them. For that reason the public should be notified that they can come here free and see the progress that has been made, and I would move that the President notify the public.

THE PRESIDENT. The public will be notified through the journals of this afternoon and to-morrow morning. We will see that that is attended to.

On motion the Convention adjourned until July 31st at 10 o'clock A. M.

THIRD DAY.—Morning Session.

CINCINNATI, July 30.

THE PRESIDENT called the Convention to order at 10.45 A. M.

THE PRESIDENT. While we are waiting, there is a matter that Mr. J. H. Nugent, of Chillicothe, would like to bring up in regard to the death of Mr. F. A. Simonds, of that city:

MR. NUGENT was called to the stage, and delivered the following eulogy:

Mr. President and Members of the Photographers' Association of America:

The task allotted to me is rather a painful one, to announce the death of one of your worthy members, F. A. Simonds of Chillicothe, who died Sunday morning, the 13th inst. The cause of his death was enlargement of the liver and inflammation of the bowels. He was confined to his bed only one week. Towards the last his sufferings were very acute, and death was a grateful relief.

Mr. Simonds was born in Winchester, Mass., in 1828. He located in Chillicothe in 1858, and has resided there ever since, pursuing photography for a livelihood. His excellence in his profession as a photographer was acknowledged by all. He was never married, neither was he a member of any church, but he attended divine service regularly. He was honest, upright and just in all his dealings. I had known him for twenty-four years. By his strict

attention to business he had become a man of some means. He has left behind as good a gallery as there is in Ohio. It is in one of those apartments where the spirit parted from the body.

Mr. Simonds was strictly a temperate man; he was opposed to Sunday work, and thought there should be one day in seven for rest. Mr. Simonds and myself carried on business in the same city for about twenty years. We never tried to injure or mar the feelings of each other. We were friends, and so parted. No man was more devoted to his business; no man studied harder to reach the top of the photographic ladder than Mr. Simonds. He was looking toward the meeting of the photographic convention only a few days before he was taken down. He said: I expect that the Convention to be held in Cincinnati on the 29th will be full of instruction, have the largest attendance, and the finest work ever exhibited. On the walls of his room he had the finest of work, regardless of cost. His charity extended to those in need, and his donations were large and generous. Brother Simonds has gone to attend the Convention above, while we are permitted to-day to attend the photographic convention here. The photographic art has lost a friend, the community in which he lived a good citizen, and the Photographic Association of America a good member.

THE PRESIDENT. At the time Mr. Gentile gave his excellent report on the "*Progress of Photography*" I mentioned that I had received a communication from Mr. J. Traill Taylor who had also sent a report. That report came last night, and proves to be a very excellent *résumé* of the progress of photography in the last year. I regret that it came too late to be read in open convention. It is quite lengthy, and will consume a good deal of time, so it will be proper that the matter be brought up and acted upon this morning as to its being placed on file for publication. We also received a letter with the report, which the Secretary will read.

The Secretary then read the following letter:

WOODGREEN, LONDON, ENG., July 19, 1884.
Leo Weingartner, Sec'y of the P. A. of A. :

MY DEAR SIR: Herewith please find my report on progress for Convention. Afraid that my handwriting might not be very clear for your reading, I got my friend, Henry Greenwood, the proprietor and publisher of the *British Journal of Photography*, to set the report in type. Although compelled to be absent this year from the Convention in physique, I am with you in spirit, and accord you my best wishes for present and future success.

Faithfully yours, J. TRAILL TAYLOR.

P. S.—My friend, A. L. Henderson, a clever London photographer, is at present in the States, and may probably visit Cincinnati during the Convention. If he does, "be down" on him for a talk on experimental photography in London. He is always in the thick of it here, and can give much valuable information. Not only so, but he invariably imparts such information cheerfully. J. T. T.

THE PRESIDENT. Gentlemen: What will we do with Mr. Taylor's report; what is your desire?

A MEMBER. I move that it be placed on file for publication, and that a vote of thanks of the Association be extended to Mr. Taylor.

The motion was seconded and carried unanimously.

Report on Photographic Progress.

BY J. TRAILL TAYLOR.

Photography advances with such imperceptible strides as to render it somewhat difficult to indicate definitely the progress it has made within a circumscribed period, more especially when such period embraces the comparatively brief span of one year. While the past twelve months have not been so fruitful in invention or discovery as to cause that period to stand out in contrast with others, neither have they, on the other hand, been characterized by stagnation.

During the past year innumerable printing processes of a mechanical description, or involving the use of printers' ink, have been invented, patented, or published. Of these, some have reference to the production of intaglio surfaces for employment as in copperplate printing; others—and these the most numer-

ous—come under the category of relief or surface blocks for printing in conjunction with type.

There is another process to which one of these distinctions apply, inasmuch as it is neither an intaglio nor relief process. It has not been patented or published, but it is worked as a secret process. And yet it is in place to refer to it here, because during the past year it has been selected as the process apparently best adapted for preparing the illustrations of the leading European photographic journals. From the brief description which I shall give, its character and possibly its *modus operandi* will be perceived. To commence at the end: the printing is executed at the lithographic press from a transfer laid down upon a lithographic stone, which is smooth or polished—not grained. And yet the print possesses a fine stippled grain similar to a chalk drawing or a print from a grained stone. From this any one conversant with the process of lithographic printing will necessarily infer that the granularity has been imparted at a stage prior to that of placing the transfer upon a stone. A film of bichromatized gelatine supported upon paper, glass, metal, or any other substance more convenient is exposed to light under a negative. It is now submitted to the action of chemicals, by which granularity is imparted to the surface, although the gelatine film may be so prepared as to possess within itself the requisites for imparting the stipple. In an outline sketch like the present, however, it is unnecessary to describe the means employed for producing this indispensable effect—the more particularly as they are, doubtless, known to most of those for whom this subject possesses interest. The requisite granularity of surface having been obtained, it is rolled up with transfer ink, and an impression being taken on transfer paper is conveyed to the stone, from which impressions are obtained in the usual mode. From such experiments as I have made I am enabled to say that the fineness or coarseness of the grain is under the complete control, and ranges between the most delicate touch of a blacklead pencil to the coarse, granular texture characteristic of the large portraits of actors and others utilized as public show-bills.

Desirous of ascertaining the possibility of applying this process to the production of surface blocks, I laid a transfer upon a polished zinc plate, etched it in such a manner as not to undercut the delicate stippled grain, and in

this way produced a block which was capable of being printed when surrounded by type. This, however, is a deviation from what I commenced with, which is that the process as printed from lithographic stones is an accomplished fact, whatever may be the nature of its details, and is one which, from now being extensively made use of by European, and especially by English journals, is worthy of notice.

No topic has of late engrossed more attention than that of the illumination of the operating-room. The yellow light by which wet collodion operations could be safely conducted was found totally inadequate for gelatine plate manipulations, and was superseded by light of an intense, deep ruby color. In a physiological point of view this was found to be productive of effects positively deleterious to the eye-sight in some cases, and inconvenient in others. Hence a reaction set in and the question was propounded—"Which is the light that produces the least amount of action on the sensitive plate combined with comfort to those in the dark room?" Mr. W. E. Debenham, a professional portrait photographer of London, constituted himself the champion of reform. He found that perfect safety to the plates, together with comfort to the eyes and a resulting light of a character which, by contrast with others, may be termed a "very subdued white light," was obtained by interposing between the lamp and the manipulating bench a compound layer composed of green glass and yellow paper. Two thicknesses of paper of a deep canary color, along with a plate of green glass or of gelatine or paper stained of a peculiar green color, have in my own case been made to supersede a deep ruby glass with much comfort and satisfaction. The particular tints are of importance.

But the special advantages of green light as a useful source of illumination in the dark room are not now pointed out for the first time. In January, 1870, an American gentleman, whose name is as much honored in Europe as in the United States (for science is of no nationality), strongly recommended the substitution of green glass, pure and simple, for the orange glass hitherto employed in the dark-room illumination; and this recommendation of Mr. Matthew Carey Lea was enforced by arguments deduced from his own experience of its use. The light he employed was gas, and the green glass was neither the darkest nor the lightest kind, but that of an intermedi-

ate shade, care being taken that it was not of a bluish-green. Such a light, while possessing all that comfort and safety for the eyes claimed on its behalf at the time by Mr. Lea, was safe for collodion plates only, and this when the light was not too powerful. The addition of the yellow paper referred to appears to fulfill all the requirements of the present time. Even when it may prove inconvenient at once to remove the red glass from a window or lantern, a marked improvement in the quality of the light will be immediately perceived by the addition of one thickness of yellow paper.

The subject of increasing and reducing the intensity of gelatine negatives is one that has received and is still receiving much attention. As regards intensification: chloride of mercury followed by other agents still enjoys popular favor, notwithstanding many recorded cases of deterioration. The first action of chloride of mercury upon a negative, as we all know, is to turn it black. If the action be arrested at this stage by copious washing the image appears to be permanent. Certainly I have found no change in some that were treated in this manner about nine years ago, while in connection with other negatives treated with this salt, combined with iodides and other preparations, I have not experienced the same immunity from change.

A method of adding iodide of mercury to the developer, as suggested by Mr. Henry J. Newton, by which an increase of intensity is obtained by the developing operation, is a fitting subject for—and will doubtless receive—consideration by the members at this Convention. A solution which is at once a decolorizer and, with the addition of a few drops of silver, an intensifier was introduced by Mr. B. J. Edwards just in time to permit of its being alluded to in my *Report on Photographic Progress* last year. It consists in adding to the usual clearing solution of citric acid and alum a quantity of protosulphate of iron in the proportion of about one-third more than the combined weight of the other two ingredients. When employed without any nitrate of silver it decolorizes a yellow negative; with silver it intensifies the image. Since the last Convention it has been much tried, and enjoys popular favor. Pyrogallie acid, as a reducer of the nitrate, is also now being employed. These, it will be observed, are analogues of the methods long since suggested for collodion intensification. I fail to discover among my negatives any which have faded after having been

treated first with chloride of mercury and then with diluted ammonia, or old cyanide fixing solution nearly saturated with silver. Exceptional care was taken in the washing of these.

Reducing intensity may be effected by a variety of processes. Those only which are of recent introduction will be here noticed. Mr. A. L. Henderson has found that the fumes of cyanide of potassium, acting upon a gelatine negative to which air has free access, will effect a gradual reduction of its density. This reducing action is not a rapid one. It may be safely predicted that a method of reducing intensity proposed by Mr. E. Howard Farmer will prove to be *the* process of the future. If a solution of ferridcyanide of potassium (red prussiate) be applied to a gelatine negative the silver forming the image becomes immediately converted into ferrocyanide of silver, to remove which all that is necessary is to apply hyposulphite of soda. Mr. Farmer mixes these together in the following proportions: An ounce of the ferridcyanide is dissolved in a pint of water, and when about to use it a few drops are added to a solution of hyposulphite of soda of the same strength as the other. When the negative is immersed in this a gradual reduction of intensity takes place; for as the silver forming the image becomes converted into the ferrocyanide of silver it is immediately dissolved by the hypo. I have tried numerous experiments with this system of reducing negatives, both wholly and locally, and beg strongly to bear testimony to its merits. Its description will suggest the somewhat analogous solution of iodine in cyanide of potassium; but the latter is unmanageable and dangerous by comparison.

Much ingenuity has been displayed in the devising of instantaneous shutters, into which have been imported numerous mechanical appliances. Portrait photographers require, however, not so much a shutter giving instantaneity of action as a prolongation of the exposure at will. Without intending any slight to the many ingenious inventions designed to effect this end, I may adduce as an example of one of the latest that recently introduced by Mr. Cadett—the gentleman who, it will be remembered, was the first to apply the pneumatic principle to exposures in the camera. This most ingenious effort of Mr. Cadett's may be described as a square cap, which is fixed upon either the inner or outer end of the lens. A very fine piece of rubber tubing is attached to the side, the other end of which terminates in

the well known pneumatic ball. Upon pressing this a tiny rubber bellows concealed in the body of the cap actuates a lever, by which a sliding shutter working between guides immediately darts upwards, leaving the lens uncovered for either a fraction of a second or a period that may be prolonged into minutes according to the nature and duration of the pressure upon the rubber ball.

Shutters suggest lenses. Since the Convention of last year no new form of lens has been introduced; but immediately before that meeting an amateur optician, Mr. Thomas Furnell, devised a form of combination, which from its character appears to hold out a promise of good so soon as it is introduced by the manufacturing opticians. Although it cannot be said to possess either novelty in principle, or, indeed, anything startling—inasmuch as it is only a slight departure from what has been previously effected—yet curves other than those hitherto adopted have been imported into it, and, while there is no difficulty in its construction, it defines sharply over a moderately large field. It is a triple lens—a class, by the way, which has been out of favor for several years. Its front lens is achromatized. The centre element is a single lens of flint glass, double concave, and its back a plano-convex of crown glass.

Nothing has of late transpired in connection with negative gelatine emulsion calling for special mention, unless it be the fact that the value of an addition of iodide to the bromide is more and more fully recognized. The preparation of paper, opal plates, and plain glass plates with gelatino-chloride emulsion is now an established branch of commerce—at least in certain parts of the world. For producing enlargements by the lantern the application of emulsion to paper offers exceptional advantages, for the operations may be conducted quite independently of daylight. Opal pictures, either enlarged or printed in the frame, possess a peculiar charm; while, for lantern transparencies, a point of value is found in chloride emulsion, as with any given class or brand of plate any desired tone—from the warmest red to the coldest black, including sepia, brown, and purple—can be obtained at will by the action of the developer alone.

It is several years since eosine was suggested as a substance which, when added to collodion, tended to give a more truthful representation in light and shade of the colors of nature. It is pleasing to be able to report that Professor

Vogel has of late made some further advances in this department of photography.

Among the deaths of those more or less known in the ranks of photographers may be noticed that of Mr. Codman, of Boston, and in the Old World those of Mr. H. B. Pritchard (of the *Photographic News*), and the Rev. F. F. Statham, who was the President of the South London Photographic Society since the period of its organization.

There are many other subjects of a less important description which have transpired in the photographic world; but to even refer to them all would unduly lengthen this communication.

The PRESIDENT. This gavel which I am using has quite a history, and in connection with it I will read the following letter, received this morning from Mr. T. H. Blair.

The PRESIDENT then read the following letter:

CINCINNATI, July 29, 1884.

J. H. Kent, President of the Photographers' Association of America.

DEAR SIR: I take pleasure in presenting to you, as president of this assembled body, a parliamentary instrument of order, and in as few words as are consistent say that though our city in the Far East may be but slightly represented, it is my conviction that in heart the craft is with you.

This gavel is made from a portion of the famous "Washington Elm," which for so long a time occupied a well-guarded position on our Boston Common.

It is presented with sincere wishes for the prosperity and longevity of this Association, and in case of a disbandment the gavel is to become the property of the giver.

Yours, very truly, T. H. BLAIR.

The PRESIDENT. On the part of this Association I will tender its thanks to Mr. Blair.

There is another matter here that may be presented at this time in relation to the admission of the public to this building. I saw General Goshorn this morning, and he kindly consented to remove the doorkeeper and allow the public access to the building, including the art museum. The resolution is here offered that a vote of thanks be tendered General Goshorn in consideration of his great liberality in opening this building to the public.

A motion to the effect was seconded and carried.

Mr. HESLER, of Chicago. I want to call the attention of this Association and the members here assembled to the postal law in reference to the carriage of photographs, in which photography is put at the foot in the estimation of postal authorities. I have here a copy of the ruling of the Third Postmaster-general of the United States, which I beg leave to read.

Leave being granted, Mr. Hesler read as follows:

FOURTH CLASS.

Mailable matter of the fourth-class embraces labels, patterns, photographs, playing cards, address tags, paper sacks, wrapping paper, blotting-pads, bill-heads, letter-heads, envelopes with printed addresses thereon, and all other matter of the same general character which is not designed to instruct, amuse, cultivate the mind or taste, or impart general information. This class includes also merchandise, ores, minerals and seeds. Postage, one cent per ounce or fraction of an ounce.

THIRD-CLASS.

Mailable matter of the third-class embraces books, newspapers, periodicals, circulars, proof-sheets and corrected proof-sheets, and all matter of the same general character which is designed to instruct, amuse, and cultivate the mind or taste. Postage, one cent for two ounces or a fraction thereof.

Mr. HESLER. This class also includes fourth-class merchandise, samples of merchandise, ores, minerals, seeds, etc. You see photographs are placed in the same category as paper bags, etc., and are of no use to people in general, or at least such is thought by post-office authorities. I think this classification of photographs is an insult to photography and every man engaged in it. I do not mean so much the postage as the insult placed on the art, and I think this Association should take action in the matter and memorialize the postal authorities, to enlighten them that there is some amusement and elevation in photography.

Mr. OVERBECK, of Hamilton. I have a resolution to offer on this matter as follows:

Resolved, that the recent ruling of the Honorable Postmaster-general of the United States of America, by which photographs were placed as fourth-class matter, be and is hereby declared by the Photographers' Association as unjust, and against the business interests of the photographers as well as the merchants and manufacturers of the Union.

Resolved, that this body respectfully ask the Honorable Postmaster-general to reconsider said ruling, and that the Secretary of the Association be instructed to forward a copy of these resolutions to the Honorable Postmaster-general of the United States.

Mr. OVERBECK. I also offer that the Secretary of this Association be instructed to send a copy of these resolutions to the Postmaster-general. A motion to that effect was seconded.

Mr. WILSON. I would amend the motion. You will find that when you take the Postmaster-general to task you will have to fight your case, and these resolutions won't work. A Committee should have more than the power to present these resolutions. The Postmaster-general has reasons, and good ones, for making this change in the postal rates. I have tried to get him to bring them back. I make an amendment to this resolution, to the effect that the committee have power to do what is necessary to work about the result we desire, and not merely present resolutions.

Mr. KLAUBER. The gentleman presenting this resolution did not make any motion to appoint a committee. His resolution reads that the Secretary shall communicate with the Postmaster-general. Will some one make a motion to appoint a committee and refer these resolutions to it, or will the Secretary attend to the matter? You have no motion before you to appoint a committee.

The PRESIDENT. Was it intended that that shall come in the form of a resolution?

Mr. KLAUBER. Will any one make a motion to that effect?

Mr. WILSON. I make the motion.

Mr. KLAUBER. I do not want to make all the motions of this Convention myself. I move that Messrs. Hesler and Overbeck

shall be a committee of two to correspond with the Postmaster-general about this mail matter. I think that will settle it.

A MEMBER. I move that the Secretary be appointed chairman of that committee.

Mr. KLAUBER. I accept that amendment.

A MEMBER. I suggest that Mr. Wilson's name be added to the committee.

The PRESIDENT. A very good suggestion.

A MEMBER. I would suggest that the President be also added.

The PRESIDENT. The Committee would then be too cumbersome.

Mr. OVERBECK. I would like to withdraw in favor of Mr. Wilson from that Committee.

Mr. KLAUBER. Then make it Mr. Hesler, Wilson and the Secretary of the Association.

The PRESIDENT. You have heard the motion. Is it seconded? All in favor of it will say aye.

It was carried.

The PRESIDENT. Messrs. Hesler, Wilson and the Secretary of this Association are appointed a committee to present this matter to the Postmaster-general. While we are waiting Mr. Wilson will read a telegram he has received.

Mr. Wilson read the following telegram :

NEW ORLEANS, July 30, 1884.

E. L. WILSON :

Please extend invitation to National Photographic Association to hold next meeting and exhibition at our exposition. Signed,

E. O. BURKE.

Director-General World's Exposition.

Mr. WILSON. I cannot imagine that anyone here is ignorant of the fact that a world's fair is to be held at New Orleans, commencing in December and ending in May. I have in my hand a telegram from the Director-general of that great exposition which has just been read. Of course if action is taken on this matter favorably our next meeting would have to be between December and June next, as early as we choose. Whether or not it is expedient

to go there, that I am not willing to say; but I have here a resolution I would like to read in connection with this matter.

Resolved, that this Association accept with thanks the kind invitation of Director-general Burke of the World's Exposition, and that the Committee named below be appointed with power for the purpose of securing a national representation of photography at the New Orleans Exposition. Edward L. Wilson, Philadelphia; J. F. Ryder, Cleveland; V. M. Wilcox, New York; F. W. Guerin, St. Louis; James Landy, Cincinnati; James Mullin, Lexington; S. T. Blessing, New Orleans; S. H. Harper, Brooklyn, with power to add to their committee if necessary to do the work.

The PRESIDENT. You have heard the resolution. Is it seconded? Well, gentlemen, have you any remarks?

Mr. GUERIN. I think it would be well to have the City of St. Louis represented on that committee.

The PRESIDENT. If there is no objection the name of Mr. Guerin will be added to that committee. Are you ready for the question?

The motion was carried.

The PRESIDENT. The next matter that properly comes up is that of the amendment to our constitution. At the time of the appointment of the committee yesterday it did not occur to me that there had been a committee appointed; that matter should come up this morning. It seems to me that the most expeditious way to get along with it is to have this presented and referred to the committee to be incorporated in the report of the other committee; in that way the whole subject would be acted upon at the meeting this afternoon.

Mr. CARLISLE. What then would become of the action of the prior committee? They have done their duty; therefore I call for action to be taken on the report of the committee of day before yesterday, which should have been acted upon yesterday.

The PRESIDENT. That is what we proposed; it was an oversight, and it did not occur to me; it properly comes up at this time, and with the permission of the maker

of that amendment it will be incorporated into the report of the committee, and that will expedite the business. I think we are all agreed that an amendment is necessary, and that some change in the various portions of the constitution are necessary; but it cannot be as expeditiously disposed of in any other way. We are losing too much time over it.

Mr. KLAUBER. I wish to ask Mr. Bankes to come up here, and that the resolution presented to the committee be voted on by this Convention and then adopted, if it sees fit.

Mr. BANKES. The amendment to the constitution is already in the hands of the Secretary, and it is his business to read it to this Convention at this time.

Mr. KLAUBER. I make an explanation of this matter. The committee were handed some papers and thought, of course, as is done everywhere, that whenever a resolution was handed in the presiding officer would refer it to the proper committee. Your committee on the constitution and by-laws took up that resolution, which said that the initiation fee for employes should be three dollars; they embodied that resolution in their report. Mr. Bankes was notified to act as Secretary of that committee, but did not think it necessary to bring that resolution here. The fault seems to be that the resolution was not acted upon yesterday, and because of that there seems to be some feeling; I do not think there should be any. I move that the resolution be read and passed. I have no feeling in the matter.

The PRESIDENT. I do not understand that there is or need be any feeling in regard to this matter. These two resolutions are exactly alike, and we propose now to have the former resolution voted upon, the one that should have been presented yesterday. That matter may be brought up at this time, unless there is some objection to it. We will now proceed to vote on the resolution.

A MEMBER. I move that the resolution be again read.

A MEMBER. I move that this matter be

laid over until the afternoon's session, and that we now adjourn.

A MEMBER. Mr. Klauber made a motion that a committee on by laws be appointed. The resolution before the house is a resolution to amend the constitution.

The PRESIDENT. I understand the reporter has the question down and can read it.

The reporter here read the proposed amendment.

Mr. WILSON. I move that this amendment just read by our reporter be referred to the committee on amendments to the constitution.

The motion was seconded.

Mr. KLAUBER. I offer as a substitute—

Mr. CARLISLE. I call the gentlemen to order; there is a motion before the house and it has been seconded. Mr. Wilson's motion is properly before the house and seconded.

Mr. KLAUBER. Mr. President: If the motion is properly before the house I have a full right to offer an amendment or a substitute.

Mr. CARLISLE. I claim it has not yet been stated.

The PRESIDENT. The motion is before the house, and may properly be amended at this time.

Mr. KLAUBER. Now, Mr. President, to settle this matter, I offer this report of the committee as a substitute for the resolution now before you. I will withdraw my substitute.

The PRESIDENT. Gentlemen, you have heard the original motion; the substitute is withdrawn.

The question is called for.

Mr. WILSON. My motion was that the resolution just read by our short-hand reporter be referred to the committee on amending the constitution; that disposes of Mr. Carlisle's motion satisfactorily; and next comes our report, which will embody the same thing.

Mr. BELLSMITH. What I wanted was to save time and get the thing in proper shape, so I move to refer it to the committee on the amendment of by-laws.

The PRESIDENT. You have heard the resolution. Are there any further remarks?

It was carried unanimously.

Mr. CARLISLE. Mr. President, are the resolutions not to be read this morning? they must be read in this session to be acted upon in the next.

The PRESIDENT. Let them be read.

The report of the committee was then read.

A MEMBER. I believe that the employés under the amendment to the constitution and by-laws just read are required to pay an initiation fee of three dollars, and as their annual dues one dollar. I would amend that so that the initiation fee of an employé be two dollars.

The PRESIDENT. I do not understand that this matter is open for discussion at this time; it properly lies over for one meeting to be called up again this afternoon when it can be discussed. The constitution provides that any amendment shall lie over one meeting. The next business in order is the election of officers.

Mr. WEINGARTNER. A gentleman of the Toledo Moulding Company has lost a pocket-book containing eighty dollars. Anybody finding that will please bring it forward and give it to him.

The PRESIDENT. Here is a matter that has just been handed in; it is a matter that all can take a part in if they choose, asking the President to announce that Mr. Crowell, of Rochester, Minn., desires to take a large picture of this Convention before the building at three o'clock; all who want their pictures taken will present themselves at that time. The session this afternoon will be at 2:30. There was an announcement that Mr. Seavey was to make some exhibition of posing; that will be deferred until four o'clock, to accommodate the meeting. Before proceeding to the election of officers I wish to appoint a committee on the Progress of Photography. I name on that committee Messrs Wilson, Gentile and Carbutt. We will now proceed to the election of officers.

Mr. KLAUBER. I offer as a motion that any name which has been proposed by the

committee on nominations, that names may be presented by this assembly in addition to such names and voted for. For instance, a President has been nominated by the Committee; let the Convention have the right to nominate anybody else they choose. It has been done so before.

The PRESIDENT. Is the committee on nominations ready to report?

Mr. WEINGARTNER. The committee on nominations offer the following names for the ensuing year: President, James Landy; Permanent Secretary, W. H. Potter; Treasurer, G. M. Carlisle; Executive Committee, Joshua Smith and W. A. Armstrong, and recommend as the next place of meeting Buffalo, New York. For Local Secretary, H. McMichael.

The PRESIDENT. You have heard the report of this committee?

Mr. KLAUBER. I move that the report of the committee be received. Seconded and carried.

Mr. KLAUBER. I move that other nominations are now in order.

Seconded and carried.

The PRESIDENT. The President will be first voted for.

Mr. BANKES. I rise, Sir, to present the name of a man not very old in years, perhaps, but who has won great distinction in our art within the last few years. He is a gentleman in every way capable to fill the position worthily; high-toned, genial and capable. He is a gentleman also who has won great distinction in this great Convention and the Conventions for several years past. I think he has never failed to attend a meeting of this Association. He is a gentleman, a progressive photographer. I think he will reflect credit upon the Association; a gentleman of whom we all can feel proud. I present the name of Mr. F. W. Guerin, of St. Louis.

The PRESIDENT. Mr. Guerin is presented as a candidate. Are there any other candidates?

A MEMBER. My friend, Mr. Guerin, wishes me to state that he cannot and does not wish to accept the office.

The PRESIDENT. Mr. Guerin wishes

the gentleman to announce that he cannot and will not take the office of President.

Mr. BANKES. I should have stated that Mr. Guerin is a very modest man. Mr. Guerin, I have no doubt, would serve to the best of his ability if elected. No man would feel justified in declining a position of that kind conferred upon him by a majority of the members of an Association of this kind.

The PRESIDENT. Mr. Guerin is nominated. Are there any other names?

A MEMBER. I desire to nominate Mr. E. Klauber, of Louisville, as President of this Association.

Mr. KLAUBER. I hope the gentleman from Tennessee will withdraw my name. I am too young and I have too short hair on my head to accept the position of President of the Association. It may be in ten years from now I may accept it.

The PRESIDENT. Mr. Klauber asks the gentleman to withdraw his name.

A MEMBER. I will not withdraw his name.

The PRESIDENT. Mr. Klauber's name is not withdrawn, and he stands as a candidate.

A MEMBER. I nominate Mr. R. E. Lewis, of Springfield.

A MEMBER. I nominate Mr. Ryder, of Cleveland.

The PRESIDENT. If the candidates are all nominated we will proceed to ballot.

A ballot was then taken with the following result. Guerin 83, Landy 72, Klauber 31, scattering 5.

It was then moved and seconded that the one receiving the lowest number of votes be dropped. Carried.

There being no election a new ballot was ordered to be taken. It resulted as follows: Landy 85, Guerin 53, Klauber 20. It was then moved and seconded that the election of Mr. James Landy be made unanimous. Carried.

Mr. G. M. CARLISLE, of Providence, was elected Treasurer without opposition.

W. H. POTTER of Indianapolis, and Leo Weingartner of Cincinnati, were nominated for Secretary. Mr. Weingartner was elect-

ed, receiving 65 votes to Mr. Potter 39. By a vote of the Convention Mr. Weingartner's election was made unanimous.

Joshua Smith and W. A. Armstrong were nominated for Executive Committee. It was moved and seconded and carried that the Secretary cast the vote of the Convention for those gentlemen as Executive Committeemen.

Mr. CARLISLE moved that the election of Vice-presidents be laid over until the afternoon. Seconded and carried.

On motion the Convention adjourned until 2:30 P. M.

AFTERNOON SESSION.

The Convention was called to order at 2:40 P. M.

The PRESIDENT. The first business in order is the amendments to the constitution; they will probably be taken up section by section.

The SECRETARY then read the proposed amendments, as follows:

To the Officers and Members of the P. A. of A.

GENTLEMEN: Your committee to whom was referred the revision of the constitution and by-laws, beg leave to submit for your consideration the following changes:

Strike out all of sections 2, 3 and 4, article II., of the constitution, and insert in lieu thereof the following:

Section 2. Any person who is eligible may become a member of this Association, by making application to the Secretary and paying an initiation fee of three dollars and one year's dues of two dollars in advance.

Section 3. The annual dues shall be two dollars for a proprietor and one dollar for an employé, and no one shall be considered a member until he has paid this amount to the proper officer, as above provided. Any member may be expelled for improper conduct by a two-thirds vote of the members present at any annual meeting.

Section 4. The annual dues become

payable on January first of each year, and any member failing to pay the same prior to the adjournment of the annual meeting shall forfeit his right to membership, and can only be reinstated on payment of an initiation fee, as provided in case of admission of new members.

We also strike out all of sections 1 and 2, article III., and substitute the following:

Section 1. The officers shall be—a president, two vice-presidents, a recording secretary and a treasurer, who shall be elected annually, and shall hold office until their successors are elected and installed.

Section 2. The president shall preside at all meetings and administer the rules of order usual in deliberative bodies; he shall nominate all special committees unless otherwise directed; he shall countersign all orders on the treasurer, and shall also annually appoint a local secretary, subject to approval of the executive committee, for the place where the annual meeting is to be held.

We strike out all of section 5, article III., after the words "the treasurer shall" in line 13 of said section, and add the following, so as to read—"the treasurer shall be required to give an indemnity bond that shall be deemed sufficient and satisfactory to the members of the executive committee, and said bond shall remain in the custody of the president of the Association.

All of which is respectfully submitted.

Signed, E. KLAUBER.
T. W. BANKES.
H. S. BELLSMITH.

A MEMBER. I move the adoption of the sections.

A MEMBER. Will the Secretary please read the whole constitution? (The constitution was then read.)

Mr. BLUNT. I think, if you charge five dollars, you will not get an increased membership, but will lose thereby. This is my view of it. I would suggest that the fees be three dollars without any initiation fee. From a very little company we have grown

until we are now a great society, and I don't believe in spoiling the work which it has taken so long to build up. I believe in letting well enough alone. What we want is more members—it is not the amount of money each member pays; all we want is enough money to run the concern. I believe in getting more members for less money. I think the amount proposed will rule them out, so that none will come in.

MR. BELLSMITH. As a member of that committee I desire to explain that there was no thought of increasing the expense to those who are already members; but the effort made is for the purpose of retaining those who are members now as permanent members. By fixing the initiation fee at three dollars, it will prevent a great many from slipping out of the Association next year who will not come to the Convention. We want to prevent this, whether they come or not. We want to reduce expenses; it is to insure a regular income. In the case of a member dropping out because of a failure to pay annual dues, if he drops out the following year he will have to pay two dollars in order to become a member; but, I think, if the fee were one dollar he would send his next year's dues whether he comes or not.

A MEMBER. I don't think there can be any question of it.

The motion was then put to a vote and carried by a very large majority, to adopt the first amendment to the constitution.

THE PRESIDENT. The Secretary will now read the next amendment. (The Secretary read the amendment, and, being put to a vote, it was carried unanimously.)

A MEMBER. Mr. President, what do we understand by the name of an employé?

THE PRESIDENT. Anyone not a proprietor is an employé.

A MEMBER. Why would it not be a good idea to give them the initiation fee, and make it free as regards employés? It would be a splendid thing for the Association.

THE PRESIDENT. That is a good idea. I approve of it.

A MEMBER. I will propose an amend-

ment, that a clause be inserted in that article making the initiation fee for employés two dollars; the resolution at present reads, the initiation fee for a proprietor is three dollars, and, of course, it is taken for granted that an employé is to pay the same amount. I understand Mr. Bellsmith in his remarks intimated that he thought that if there was a difference in the annual dues between a proprietor and an employé, there ought to be a difference in the amount of the initiation fee; and therefore I move as an amendment that the initiation fee for employés shall be made two dollars in place of three.

A MEMBER. I second that motion.

THE PRESIDENT. The resolution now before the house and seconded is, that the initiation fees of employés shall be two dollars instead of three. It is proposed as an amendment, and that is the question now to be discussed.

A MEMBER. My idea of it would be this: take the employé and let him pay two dollars initiation fee, and exempt him from the first year's dues; then he would be a member; he would pay the sum of two dollars for initiation, and would be free from dues the first year. It would be a help to him.

A MEMBER. Do I understand that we can move an amendment to the question after it has passed? I understand that it is proper.

THE PRESIDENT. I never so ruled, but there seems to be some opposition to reconsidering the motion. A proper way, I suppose, would have been for some one voting in favor of the resolution to move its reconsideration.

A MEMBER. Then I would move as an amendment that we reconsider the section just passed.

A MEMBER. I second the motion.

MR. CARLISLE. I would like to say this. In regard to this matter of dues of employer and employé, I believe that while the employer attends this Convention, his business goes on at home and there is money made to pay his expenses while here; whereas the young man who attends this

Convention as an employé loses his time at home invariably, and is put to the same expense the others are. Now are there not enough gentlemen here, who are sufficiently interested in this organization, to consider fairly this proposed decrease in the initiation fee to boys or employés. There are many young men, and we want to get them interested. They do not earn large salaries, and I would like to see them come in without any cost of initiation and pay one dollar per year.

Mr. KENT. I think the question before the house is on the amendment to reconsider the previous vote; those in favor of reconsidering this amendment will say aye. Carried.

Mr. CARLISLE. I move you that the committee in charge of the amendments to the constitution make such alterations as to conform with what appears to be the desire of this organization, and to insert therein the privileges for the employé we have just asked for.

The motion is seconded.

Mr. BELLSMITH. I think it is rather dark as to what the desire of this Association is on this question. I am an employé at this time, though I have been an employer and proprietor of a gallery, and hope to be capable of earning sufficient to leave my business and come to this Convention and stay a week, and pay all my expenses, including the initiation fee. I think there are a great many employés who are better off than their employers, and I don't see why we make this distinction. We don't want boys in this Association, but men of stamina and brains; we want men; we have plenty of men who are employed at a salary of so much per week, and they should only have the benefits of this Association while they pay for them. I don't see why a distinction of such a kind should be made. If a man has ability, he is capable of earning a good salary, and he is capable of paying his dues as well as the employers. I am opposed to this distinction, Mr. President.

Mr. CARLISLE. I arise to a point of order. There has been a motion made and

seconded, and it should not be discussed until the chair states it. I would just like to ask the gentleman who has always been able to make this munificent salary, I would like to ask him if he has been in former years as able to pay as now?

The PRESIDENT. These remarks are personal and are entirely out of order.

Mr. CARLISLE. My motion was to the effect that the committee be called upon to come to the stage and so make the amendment to the constitution that it will conform to the desires of this organization; or, in other words, that the resolutions be returned to the committee having them in charge. It will only take them three minutes. I move that the resolutions be referred back to the committee. (Carried, unanimously.)

The PRESIDENT. Do I understand that it makes it one dollar or two dollars for initiation fee? I suggest to make it two dollars.

A MEMBER. I understand it is the wish of this Association, that employés shall not pay anything in the way of an initiation fee, but simply one dollar as annual dues.

The PRESIDENT. The resolution is that they shall be required to pay two dollars without any annual dues for membership.

Mr. CARLISLE. The prime difference between these as they now stand and as they previously stood is that there is no forfeiture to the employé; that is, if he withdraws for a year or two he can return without paying any forfeiture; whereas before, if he was out two years and desired to return, he would have to pay four dollars. To my understanding that is the prime and only difference.

The amendment to the constitution referred to was carried unanimously.

After a short discussion, section four of the amendment to the constitution was carried unanimously, and without opposition.

The SECRETARY then read the amendment relative to the officers of the Association, which appeared heretofore.

Mr. CARLISLE. Mr. President: If it is proper I should like to say a word; this matter of vice-presidents seems to be of

great importance. I represent as vice-president one of the smallest States here, and the honor does not seem to be so great as it appears. I myself have been unable to obtain a reduced rate on the railroads to the Convention on account of it.

Mr. KLAUBER. I move you to adopt that resolution.

Mr. CARLISLE. I want to say that I hope my State will grow sufficiently large that we may have another man in it who can come to the Convention, and I want him to have the honor I have enjoyed for the past ten years; therefore I hope that this glory or honor, whatever you may call it, will not be taken away from our brotherhood, and that there may be a representative man from each State, at least in order that he may secure a reduction in railroad rates. For instance, it is only a matter of fifty dollars to come over here, and if we get another man we possibly may get a rebate; therefore, I hope we may continue to have vice-presidents from each State.

A MEMBER. It was not intended to dispense with one vice-president from each State, but to have two for the United States; the vice-presidents heretofore have been nothing but figure-heads; they really never did anything; they never made any report; but the reason we propose to make two vice-presidents for the United States is this: should anything happen that the president could not be present, you would have no one to open your meeting, while if you have two vice-presidents one can act as the presiding officer. I believe you ought to have two vice-presidents, by all means, who are actual officers of this Association, and if need be you can also have the usual number of vice-presidents.

Mr. CARLISLE. I move to elect two vice-presidents who are actually officers of this Association.

Mr. CARLISLE. How would it look to elect two vice-presidents and appoint fifty? It would not cost anything to do this.

Mr. BELLSMITH. In case of the absence or sickness of the President, the power lies in the hands of the executive committee to

appoint a presiding officer; I think you will so find it in the constitution.

A MEMBER. I propose an amendment to that; that you elect one honorary vice-president from each state in addition to the two elected.

Mr. BELLSMITH. I want to explain my objection to this. In selecting a vice-president from each State it frequently occurred that a man who would be present became such and was not a fair representative of the photographers of his State, and would use his title to unfair advantage. It has occurred that a man so elected has gone home and abused that honor; I have in mind an occurrence in one State where a man so elected was guilty of selling a fraud as a patent clap-trap process, and advertising himself as vice-president of the Association of Photographers. I say unless great care is taken in the selection of men for vice-presidents who are representatives of the Association, we are likely to inflict a great deal of evil and harm to the organization.

Mr. BLUNT. I have come six hundred and twelve miles to attend this Convention, and I desire to say we have no inferior photographers from my State who are members of this Association. They are all qualified photographers, and as for the Cheap John's, I don't think they have money enough. The fact that we had vice-presidents from every State built up this Association. It is an honor to the man so elected; and he goes home and works and induces men who have never been here before to come. Dispense with these vice-presidents and I say you will break up this Association.

Mr. BELLSMITH. I move that we insert a clause designating the duties of the vice-president.

A MEMBER. In addition to the two vice-presidents I move that you elect one honorary vice-president from each State.

A MEMBER. Honorary members generally are about as good as three legs to a chicken.

A MEMBER. Is the motion before the house on this amendment?

The PRESIDENT. The motion was before the house and is being discussed.

Mr. CARLISLE. In order to get to the end of this matter I move you, Mr. President, that the clause be referred back to the committee for alteration.

A MEMBER. I understand that Mr. Klauber made a motion to adopt this as it read.

The PRESIDENT. The motion is made as an amendment; the only objection I can see to a vice-president from each State is the difficulty of obtaining men to act as such. We may not have a man from half the States in the Union; I presume we have not, and it will be exceedingly difficult to name those men. We may even name a man as vice-president who is not a member of this Association, and who has allowed his membership to lapse by not paying his dues.

Mr. KLAUBER. I think I can settle that matter in two minutes. You are objecting to having two vice-presidents in each State; then call them state secretaries. Give the child another name.

The PRESIDENT. The amendment is withdrawn, and it reverts back to the original motion that we adopt this amendment.

The amendment to article V. was adopted, with the addenda that the Secretary be required to make a quarterly report to the presiding officer and turn over all his funds to the Treasurer, who will give him a receipt for the same.

Mr. KLAUBER. I move that the names handed in by the nominating committee be regarded as the vice presidents of this Association.

A MEMBER. Please have them announced to the house.

The PRESIDENT. The report is not here. You will have to take it by faith.

Mr. BLUNT. I think it unfair to reappoint a vice-president for the present year, and I would suggest that we confer the honor on a member who is not present.

The PRESIDENT. This is in the hands of the committee, who are perfectly reliable.

The motion was carried.

The PRESIDENT. In the absence of Mr.

Carbutt I would simply say briefly on looking over the different locations, that the committee think well of Buffalo for many reasons. It is a cool, thriving little place; it is also easily accessible by rail from many directions; it is reached by all the leading trunk lines of the country; it is also accessible by boat; and the location would be desirable, I am sure. It is within twenty miles of Niagara Falls, and many of our members have not perhaps visited that beautiful spot; excursion trains can be run up there from Buffalo at a very small sum; then they have fine hotels and an excellent hall. It is fairly central, and of late years it is well known that eastern people have not attended the Conventions as they formerly did. They will not come far West. I do hope that if we get this Association to convene at Buffalo next year, we can get the New England and New York City people to be present. I am sure our Western friends would be equally willing to go there. I know our Southern friends would find it a cool and comfortable retreat from the heat, and I hope it will be chosen as the place.

Mr. POOLE. I most emphatically endorse that nomination from this standpoint. We have not a very great number of photographers in Canada, but it is fairly well represented. If the Convention meets in Buffalo it will very materially increase the Canadian membership, as Canada is only one hour's ride from that picturesque and beautiful city.

A MEMBER. The only objection to Buffalo is that the place is so beautiful, cool and comfortable that the members of the Association may all go down and leave the rooms of the meeting as empty as they are to-day. I think the members of this Association ought to consider the benefits of this Convention rather than go about the streets with their cameras under their arms taking views, and it would be much to their advantage. It is almost a disgrace that they leave this hall empty and allow all such important things as ought to come before the Association to the number here this afternoon.

The PRESIDENT. It is intended to impose a penalty for non-attendance at the next meeting.

Mr. SMITH. Gentlemen: I rise to propose as the next place of meeting for this Convention the birth-place of this body, the place where we have the greatest city; where all the railroads centre, and where the great broad West has its metropolis; a place where the photographers will concentrate; in the name of the mother of this Association I demand that the Convention be brought home, in order that she may see what growth it has reached. I hope that Chicago will be the place elected, and if it is, you will have a very fine reception.

Mr. WILSON. Mr President: The National Photographers' Association met in Buffalo once and had one of the best times they ever had; the result of the Convention in a literary way was far ahead of anything ever known in Convention times. I am heartily in favor of Buffalo, but I am more heartily in favor of another place, and I will give you my reasons therefor: We have been courteously invited by the Mountain Lake Park Association to meet there; we have all the advantage of space, and the place is easy of access; and what is more important than all to a Convention like this is, that by meeting there we save from seven hundred to one thousand dollars, the use of the building being given to us free. This amount of money, if we have it, we can spend with better results in getting some lecturers or some one who would teach us something that would benefit us, and where the members could recount their experience, progress and so forth. Now these are the advantages of Mountain Lake Park. If it was not for that, I would speak of New Orleans, as the world is to have an exhibition there, and numbers will want to attend it.

Mr. KLAUBER. Since I became a member of this Association I have always opposed going to a small place.

Mr. WILSON. It is not a small place; it comprises 850 acres.

Mr. KLAUBER. Or to a park, or Saratoga, or to any other of those places. And

I come to the conclusion that the best thing we can do to make the Convention a success is to have it in some large, centrally located place. Go to a place where there is not quite as much amusement; not quite as much to see; not quite as many animals as there are in Cincinnati, or Buffalo, or New York. I myself would like to go to Buffalo better than anywhere else. I make a trip East every year, and I think we ought to try the country once; go to the country where the members will stay a little more together than here. I believe if we go to Mountain Lake Park, we will not only save a thousand dollars, but we will rest ourselves; we will sleep better and not have so many mosquitoes, and therefore I heartily endorse the nomination of Mr. Wilson.

A MEMBER. As a Southern man I would like to make a remark as regards location. I am satisfied that this Convention will make a mistake by going to Buffalo. Here are my reasons. We ought to go to Chicago or Mountain Lake Park—I don't care which. We should go to one place or the other; either to Chicago or to Mountain Lake Park. Each place has great advantages over Buffalo. I say this, that if we go to Chicago I will promise you in the name of one of the largest railroads in America that you shall go from Chicago to New Orleans or back for one cent a mile over the Illinois Central Railroad. I should never want to go to a Convention again if we cannot have quiet. I do not care to go to any more excursions; I would rather be bored to death.

Mr. BELLSMITH. I was a resident of Buffalo for seven years, and can vouch for the free facilities and many advantages to be derived from that location. As far as the noise referred to by the last speaker is concerned I can promise him one thing, that we will have a hall in which you can hear every member distinctly, back to the last seat in the room; it is located in a portion of the city not infested with heavy traffic, and the hall is particularly well adapted to speaking. It is large, and has an abundance of room for exhibits of both stock and photographic display. The hotel accommo-

dations are excellent; I don't think their equal can be found in any other city. You can get the hotels there for two dollars a day, for which we pay here three and three and a half. Railroad facilities are perfect, as it is reached by all the trunk lines east and west. Gentleman, Buffalo is by far the best.

The PRESIDENT. The place receiving the least number of votes shall be dropped.

A ballot was then taken, which resulted as follows: Buffalo, 42; Mountain Lake Park, 40; Chicago, 40.

Mr. BELLSMITH. I move that Buffalo be unanimously endorsed as the place of our next meeting.

Those in favor of this motion say aye. (Carried.)

The committee appointed by Mr. Cramer to award prizes for best collection of pictures made upon his plates reported as follows:

CINCINNATI, July 30, 1884.

MR. G. CRAMER:

Your Committee on Awards, having performed the duties assigned to them, beg leave to submit the following report:

For first prize on work 11 x 14 and larger, F. W. Guerin, St. Louis, Mo.

For first prize for best collection of views, J. Landy, Cincinnati, O.

Your Committee would recommend honorable mention of the following exhibits:

Scholten, St. Louis; Max Platz, Chicago; Gilbert & Bacon, Philadelphia, Pa.; O. P. Scott, Quincy, Ills.; Blessing & Kuhn, Baltimore, Md.; A. N. Hardy, Boston, Mass.; D. A. Clifford, St. Johnsbury, Vt.; P. M. Pausch, Newark, O. Had Mr. Cramer permitted the collection made by his operator, Mr. Krueger, to be entered for competition it would certainly have secured the prize, and should have special mention.

Respectfully submitted,

[Signed]

JOSHUA SMITH,
W. H. POTTER,
G. M. CARLISLE,
C. T. STUART,
S. J. DIXON,

Committee on Awards.

Mr. GENTILE. I have here a report on the death of H. Baden Pritchard, which I desire to read. It is as follows:

The Committee appointed at yesterday's session to draft resolutions on the death of the late H. Baden Pritchard, the distinguished English author, beg to report as follows:

Whereas, In the course of human events it has pleased Almighty God to remove from this world of care our much-esteemed friend and co-worker H. Baden Pritchard, by the loss of whom two hemispheres are called upon to mourn;

Resolved, That this Association do hereby take cognizance of this our severe loss by expressing our deepest sympathy with the fraternity at large. The same to be spread upon our records. C. GENTILE, Com.

It was moved and seconded that this report be placed on file for publication.

Mr. KLAUBER. I move you, Mr. President, that this Association tender a vote of thanks to the citizens of Cincinnati and to the press, and to all who have assisted in making this a pleasant and successful meeting, as this has been. (Carried.)

GENTLEMEN: One word more, there has not been one single word or thing as far as chemicals and business is concerned, which I must say I much regret. Before closing I wish to recommend to your use the formula of Professor Eder, as regard to the yellow color for the dry plate.

The PRESIDENT. The battle is fought, and I am glad to say that our party has the victory. We have had a grand and successful meeting; and as we are about to close this meeting, I would like to express to you my appreciation of your kindness and consideration. Thanking you again for your courtesy, I would cheerfully resign the office of President to my friend, James Landy of Cincinnati, and bespeak for him the same kindness and consideration you have shown to me. The Exposition will be open until to-morrow night, while the business part of the Convention will be closed by this adjournment. If there is no further business, the motion to adjourn *sine die* is now in order.

Mr. KLAUBER. I forgot to include one little thing. I think this Association ought to pass a vote of thanks for the efficient services, and the hard and good work that

our Secretary, Mr. Leo Weingartner, has done in making this Convention the success it has been. I therefore move a vote of thanks to our genial and efficient Secretary, Mr. Leo Weingartner, and to all the executive officers. (Great applause).

The motion to adjourn *sine die* and the vote of thanks were carried unanimously, and the Convention adjourned to meet in Buffalo, pursuant to time designated by the executive committee.

The Photographic Exhibits.

NEVER were the exhibits finer nor more numerous, was the general opinion of the members at the Fifth Annual Convention. And the most striking one of any was thought to be that of Mr. J. H. Kent, the very popular and successful gentleman who lately so admirably filled the presidential chair. Superior, if possible, to the magnificent exhibit he made at Milwaukee, which all concede was the finest among the fine, the qualities possessed by his superb photographs just shown in Cincinnati were again unequalled. It is unnecessary to say more than that, as before, they were all made on the Eastman plates. There were also some splendid large negatives from which the professional could personally enjoy the examination of finely developed plates.

Near them were also some very charming results from the gallery of Mr. Gregg, also of Rochester, and likewise made solely on the Eastman plates, consisting of a few large busts and heads of ladies and gentlemen, in life-size and larger, made direct with the Dallmeyer rapid rectilinear lens. These astonished all who saw them.

Next in point of attractiveness, and by some they were even more highly esteemed on account of the character of the subjects, principally children, was an exhibit by Mr. Cramer, the work however, of Mr. E. Krueger, formerly of this city, who at present directs Mr. Cramer's establishment in St. Louis. Mr. Krueger, who richly deserved the prize awarded by the Cramer Dry Plate Co., received only special men-

tion, for the reason that the excellent results shown were made in Mr. Cramer's own gallery.

Another very beautiful display was one by Mr. Guerin, of the same city, who has achieved name and fame by reason of his artistic productions in photography generally, and also his statuesque portraits. Mr. Guerin was fortunate in securing the coveted prize of \$300 offered by Mr. Cramer for excellence in the use of that particular plate, and also the \$100 prize of the St. Louis Dry Plate Co.

Another gentleman who gained a prize from the St. Louis Co. was Mr. W. H. Potter, of Indianapolis. His specimens were also much admired, and by many he is regarded as one of the promising photographers of the future.

A peculiarity of Mr. Potter's exhibit was the largeness of negatives chosen. One particularly, entitled Moonlight, 20 x 36, depicting a young lady and child peering through the blinds on the moonlit sea was very effective, as also another maiden in a boat, saluting persons on land. Still another couple of youngsters, in quest of the answer to, What are the wild waves saying? was greatly admired, as also others with toys. Children engaged in many of childhood's sports was a chosen feature, and so natural in their rendering as to mark Mr. Potter as one of the rising men. Any good plate would undoubtedly be safe in his hands.

Another display, by Mr. F. Gutekunst, of Philadelphia, on the Keystone plates, was also frequently surrounded by admirers, especially some from negatives on transparency plates, of the Capitol, the Treasury, Smithsonian, and other well known public buildings. These beautiful works of the photographic art are but seldom recognized by the craft generally, and it is hoped the opportunities afforded by these examples will not fall flat on the members of the P. A. of A. especially.

Quite noticeable was a large display by an enterprising dealer, who desired by this means to attract attention to his wares. Among this collection a trio of heads

was very generally admired for their artistic rendering. Several of the fine subjects in this grouping were received from across the water.

Mr. Dixon, of Toronto, was represented by his electric light portraits, and also some attractive landscapes, many of which were glacé. His sky effects were admitted to be unusually good.

Mr. G. M. Elton, of Palmyra, was the fortunate contestant for prizes for good work on the Inglis plate; Mr. Cook Ely, of Oshkosh, Wis., bearing off the honor for the first prize for the best collection on 14 x 17 plates of that make. Mr. Ely has few rivals in Wisconsin. These were made with Dallmeyer's rapid rectilinear lens.

Mr. W. A. Armstrong, the worthy treasurer of the P. A. of A., was represented by an admirable series of landscapes, very happily titled.

In addition were also good instantaneous prints by Ludovici, of New York, whose merit as an artist is widely recognized, and also from the well known galleries of Fredricks, Edsall and others of this city, all of whom enjoy a precedence already well recognized.

Mr. Brainerd of Rome, N. Y., was a successful candidate for honors. Quite noticeable also were contributions by Messrs. Schlegel, of Richmond, Ky., Frank Thomas, of Columbus, Mo., Sedgwick, of Zanesville, and Sutter, of Milwaukee, and many others. In a future number we hope to give a revised list of the exhibitors and enumerate such as now escape our recollection.

The Exhibit of the Apparatus, etc.

WITHOUT a shadow of doubt the fraternity were never so completely "taken by storm," in the matter of photographic apparatus, accessories and backgrounds, as they have been this year, 1884, A. D., in the variety, quality and abundance of articles displayed.

And they were not displayed only but generally sold; and therefore photographer, dealer and manufacturer have alike been benefitted.

In magnitude, character, novelty and usefulness the tables crowded with the latest and most approved productions that ingenuity united to skillful handicraft could combine, were presented by the long established and respected manufacturers and dealers, E. & H. T. Anthony & Co., of New York. Their efforts in contributing towards the success of the Fifth Annual Convention have been marked with unusual intelligence and liberality, and have elicited most gratifying recognition on every hand.

Situated immediately before the organ in the vast Music Hall, and facing the assembling concourse, their display was unique in kind and unapproachable in extent.

Represented by the active junior of the house, Col. V. M. Wilcox, and assisted by Mr. George A. Ayers (than whom there is none more popular), Mr. Samuel C. Crampton and others, the products of that firm, and the varied requirements of the professional and amateur photographer, were shown and courteously explained. In fact, one of the principal attractions of the Convention, vast as it was, was their beautiful and novel exhibit of apparatus, chief among which was such a line of cameras large and small as had never before been seen on this or any other continent. By the way, Mr. Cramer was the purchaser of the largest one, capable of receiving a plate measuring 25 x 30.

The Bijou Camera, also, the most diminutive of its class,—a perfect gem, small enough to stow in one's vest pocket nearly, and complete with all the requirements of an instrument of the larger sizes—aroused like the envy and admiration of the public and the fraternity. And beside it were long lines of the Novel Fairy, the lightest, most compact, most ingeniously devised camera that has ever been made in the old world or new. The Benster Plate-holder, too, the *beau idéal* of all plate-holders, instantly adaptable to any size of plate, without the use of kits or inside carriers. The little Detective, whose powers of observation are the source of infinite amusement and occupation. The Anthony Enlarging Camera, a simple, cheap and unpretentious in-

strument of unlimited usefulness in the hands of the portrait photographer, who can thereby and with the gelatino bromide paper save lots of time and trouble. The Anthony Self-Changing Shower Box, in which dry plate negatives may be constantly and perfectly washed without unnecessary waste of time.

Here was also to be seen a general assortment of photographic requisites, books, periodicals, the new transparency dry plates, etc.; lots of new and improved burnishers of all sizes from the manufactory of Mr. Entekin; the Hill & Wilson Automatic Silver Printing Machine, (a new invention recently described in these pages, which drew immensely); a full line of the E. A. standard chemicals, a lot of the E. A. portrait and view lenses (there were no Dallmeyer's; it was impossible to get them by reason of the great demand); the remarkable Platyscope Lens; the new Posing Chair recently invented by Mr. I. H. Stoddard, of New Haven, and his handsome and ingeniously devised camera of rare beauty and workmanship, that was said, with all its many new features, to have cost upwards of two hundred and fifty dollars; samples of a new retouching dry plate varnish; specimen enlargements on gelatino-bromide paper with Anthony's New Enlarging Lantern, both untouched and worked up with the Air Brush, and many other things too numerous to mention.

Next to the Anthony's, came the exhibit of Benjamin French & Co., of Boston, including their usual fine array of Voigtlander and Darlot lenses, and specimens of work done with them.

Messrs. Lieber & Co., of Indianapolis, occupied a position to the left of the Anthony's, where they received their friends, and then escorted them to the well filled counters of the manufacturers and larger dealers.

Near the platform was the fine and varied display of Messrs. Smith & Pattison, presided over by Mr. Tom Pattison, of Chicago. Here was to be seen a large collection of accessories, backgrounds and photo. stock generally, and also a revolving

outside show-case for photographs, and the Baldwin burnisher. These gentlemen did a lively business.

Another well known and particularly favorite firm, the Allen Bros., of Detroit, were on hand with the Smer Lenses, concerning which we call attention to their advertisement. The work shown by them was good and the prices were exceedingly moderate.

Opposite was the goolly store of photo-stock of J. C. Somerville, of St. Louis.

Friend Jason was by no means forgotten.

Then came Hal Elderkin & Co. who have lately established themselves in Leavenworth, with a fine display. This firm is already quite popular.

The Toledo Moulding Co. joined Hal Elderkin with a fine variety of frames and sorts and sizes.

Mr. Thos. C. McCollin's line next attracted our notice, with his rapid shutter and platinotype enlargements.

Mr. Simon Wing, the venerable father of multiplying cameras, was also present with one of his instruments.

H. A. Hyatt, of St. Louis, had a number of his specialties in the way of accessories, which he manufactures and does a large business in.

P. Smith & Co., being to the manor born, had everything their own way apparently, and whatever a photographer could wish almost was to be had of them.

Then came De Voe & Co., of Springfield, O., with novelties in posing chairs, background rests, and baby charmers.

Messrs. Sheen & Simpkinson, of Cincinnati, shared with P. S. & Co. in the advantages of being on the ground. They had also a good showing.

The Scovill Manufacturing Co., of this City, under the skillful leadership of Mr. Washington Irving Adams, were next in line, with all the well known staples of the A. O. Co. Mr. Fuller, of the *Times*, Mr. Pelgrift and Mr. Flammang, also lent their valuable aid.

Near them was Mr. J. Sawtelle Ford, ensconced in a little office under the banner

of the new Chicago periodical, entitled *Photography*.

Mrs. Fitzgibbon, too, the veritable wife and daughter of the entire regiment of photographers was there with her genial smiles, dispensing good cheer and comfort to many a thirsty soul from two bountiful barrels of fresh, cool lemonade. Mrs. Fitzgibbon, we understand, was fortunate in securing the names of hosts of new subscribers to the *St. Louis Photographer*, of which she is the charming editress and proprietress. She also had charge of the statuesque photographs of Mr. Guerin.

Close by was that great all-seeing *Photographic Eye*, and its popular editor, Mr. C. Gentile.

Mr E. L. Wilson, too, of the *Philadelphia Photographer*, was ubiquitous and one of the most active, leading spirits present at the Convention.

The well-known house of John P. Bonte & Co., of Cincinnati, had a grand display of frames, and a new posing mirror. They undoubtedly did well, as also Messrs. Pape Bros. and Kugaman, of the same city and persuasion.

An exhibit of enlargements by a new process from Mr. Sherman, of Milwaukee, next drew our attention. They are said to be very easily made, but possess little force.

N. C. Thayer, of Chicago, held forth in the corridors with piles upon piles of backgrounds, under the charge of Messrs. Sweet and Sherrard, who took many orders.

But, talking of backgrounds, Mr. L. W. Seavey, of this City, undoubtedly led the van. Assisted by Mr. Govan and others, he made things lively indeed. Every one knows what his goods are, and it is unnecessary to say more than that all were well satisfied, particularly with his happy efforts in posing a lovely woman who served as a model under his plastic art. Seavey was a success, and he can rightly claim to have contributed much to the success of the Convention also.

In a modest, quiet corner was our old friend Ashe, who likewise is good on accessories and backgrounds. He, too, did a thriving business.

A Mr. Bryant, of La Porte, Ind., was another background representative. He also had quite a large supply.

Backgrounds seem to have been all the rage, for besides the above there was Mr. Spurgin, of St. Louis, Mr. Calkins, of La Porte, and a Mr. Grombach, each in the rôle of a scenic artist. Mr. Gentile believes these background people must have done a regular "land office" business.

Messrs. Lehman & Brown, of this city, had quite a large exhibit, and no doubt sold many of their draperies.

The Mallinckrodt Chemical Works, of St. Louis, were represented by a line of their manufactures, and a pretty display was made by Mr. W. A. Stewart, the refiner.

Mr. Schindler, accompanied by his son Otto, was in attendance with a line of novelties and studio furniture.

The Rochester Optical Co. exhibited a neat little amateur apparatus; Gilbert & Co., of Ravenna, O., an automatic retouching machine, run by clockwork; the Blair Tourograph Co. had a full line of their amateur apparatus; a Mr. Warren Harris, of Cincinnati, a changing camera holding 18 to 30 plates; Mr. Ezra Cope, of Hamilton, O., an improved heliotropic printing-frame, requiring no glass; Altheide Brothers, of Quincy, Ill., one of their new camera stands; Mr. Scott, of Quincy, his popular vignettters; there was also another by Mr. Mason, of Wheeling; Mr. Lockwood, of Ripon, a washing box, etc., etc.

Then there was Perry's "Champion" shutter, Garland's invisible shutter, the Hoover rapid shutter, and we are not sure there were not more.

Mr. Victor Saul, of Chicago, had a large display of velvet and other frames, and Chas. Taber & Co., of New Bedford, an exhibit of artotypes. Mr. Starr, of Chicago, demonstrated with the acme colors, and lastly Mr. McEntee with the air brush. The latter gentleman is very expert in the use of that instrument. A portrait, in the most heroic proportions, executed by him of Mr. Kent, was one of the greatest curiosities and attractions of all.

It is very possible that we may have omitted something from the above lengthy list, but we can hardly do more than give a merely mental bird's-eye view to those who were not present. But we have said enough, we think, to show what measure of success the Fifth Annual Convention of the P. A. of A. possessed.

Newspaper Brevities.

It's President Landy now.

•The flags of all nations decorate the hall.

The fair sex grace the meetings of the N. P. A.

G. M. Carlisle, of Providence, likes to be heard.

Decorum prevailed throughout the entire session.

President Kent is the most popular man on the floor.

Motions were as thick this morning as Vine Street mud.

Landy has a display of work of the highest credit to Cincinnati.

Are you comfortable? Then I must move you. Ah, you smile.

The ladies of the camera were well represented at the morning session.

There are plenty of experiments going on in almost every part of the hall.

The flood pictures on exhibition recall to the passer-by dismal reminiscences.

A simple white badge with golden fringe costs the delegates just two dollars.

W. A. Armstrong, of Milwaukee, has specimens indicative of the true artist.

The entertainments prepared for the guests could have been improved upon.

Chairman Kent makes a good presiding officer, and there is no mistake about it.

Messrs. E. & H. T. Anthony & Co. are obliging the visitors with neat memorandum books.

Frederick H. Davies is doing it for the *Chicago Photography*, of which he is the editor.

It is rather a difficult matter to get a second to a motion. It seems all want to have the first.

C. Gentile, of Chicago, occupies the reporters' table for his paper, the "*Photographic Eye*."

The newest effect, statuesque photography, is handsomely shown by C. W. Motes, of Atlanta, Ga.

Baldheads amongst the photographers are noticeably scarce. Perhaps they are all bachelors; perhaps.

Some of the photographers came up here on bicycles. But few of them are able to attend the meetings.

The three letters N. P. A. do not stand for National Photographers' Association, but for No Puns Allowed.

Judge Foraker's likeness graces a wall in the art department. It is a large picture covering almost four acres!

The President's address was received with enthusiastic applause. It was well written and quite oratorically delivered.

Mr. E. S. Hall, of Hooperton, Ill., took a picture of the main hall this morning. In other words, Hall took the hall.

Mr. Carbutt is the inventor (!) and manufacturer of the Keystone Gelatine Dry Plates, quite celebrated among artists.

When a fellow asks a photographer to take his picture, why is he disappointed when he doesn't get a reply in the negative?

The entertainment prepared for the members of the Convention consists of fire and monkeys, and—yes, of thirty-five cents.

The official reporters are kept busy taking down the proceedings, which are of a technical character and difficult of reporting.

The delegates were extended an invitation from the order of Cincinnati to attend the opening of the Grand Central Station.

In future when you want to get your likeness taken be ready to pay \$8 for a first-class picture, \$5 for a second and \$3 for a third.

The amateur photographers were numerous yesterday in the Hall, and their efforts were mainly concentrated on "taking" the best displays.

The Photographers' Convention contains more handsome men than any other convention ever held in this city. Perhaps their countenances reflect the beauties they take.

Genelli, of St. Louis, is a man of the world. He has a little boy near his place of exhibition who favors the guests with miniature photos. of prominent men and women.

Mr. Edward L. Wilson, of the Quaker City, is jotting it down for his paper, the *Philadelphia Photographer*, the oldest paper of the kind published in the United States.

One of the earliest workers was Dr. John William Draper. His sister, now living, her face plentifully besprinkled with flour, sat for thirty minutes in the full sunlight to obtain a picture.

With the old Daguerreotype process, Dr. Kane brought beautiful artistic work from the frozen regions, and did the work, too, when the thermometer was 60 degrees below zero. [How true !]

A delegate to the photographers' convention approached the Western Union office yesterday with a dispatch calling for some material, but kicked at the price demanded, claiming it to be a *nitrate* message.

Mr. W. C. A. Crowell, of Rochester, Pa., very generally extended an invitation to the members of the Association to have their "pictor took" on a 20 x 24 plate, one of the largest plates that can be used.

Messrs. Charles G. Smith, of Peoria, Ill., and Alfred S. Johnson, Jr., of Waupun, Wis., were kind enough to take the photos. of three reporters this morning. Gentlemen, consider yourselves thanked.

Mr. D. Clifton Shears, proprietor of the Palace Hotel, made his appearance about noon to-day. When he walked through the centre aisle he is reported to have muttered to himself, "Oh, what appetites !"

Two barrels filled with lemonade (not circus by a long shot) stand on the platform of the Music Hall. They bear the inscription "Compliments of the *St. Louis Photographer*, edited by Mrs. J. H. Fitzgibbon.

Mr. C. Gentile, the able editor of the *Chicago Photographic Eye* is obliging the delegates with a little pamphlet entitled a *Guide to Cincinnati*. It contains excellent representations of some of the Queen City's fine buildings.

This afternoon the members and their lady friends left for the Zoological Garden. The evening will be spent in dancing, and as there are fifty gentlemen to one lady the serious question arises, "Who'll furnish the partners?"

Mr. J. F. Jockel, one of the official stenographers of the Convention, came in a little late, but his partner was on hand early, therefore none of the flow of eloquence was lost, but instantaneously photographed—with a "dry plate" pencil.

C. H. Smith and B. I. Holcombe, the gentlemen who rode their bicycles from Detroit, will give an exhibition of fancy riding in front of Music Hall at 10 A. M. to-day, when several photographers will make instantaneous views of them.

Cincinnati photographers have not distinguished themselves by attentions to visitors. It is the first convention of any kind in this city where there has been a failure in this respect. Local committees on various duties should have been appointed months ago, so that the details could have been intelligently systematized. Such exhibitions of professional jealousy is unbecoming a city of the first class.

Mr. Edward L. Wilson, editor of the *Philadelphia Photographer*, is a prominent figure in the Convention. Mr. Wilson is the gentleman whose illustrated lectures on the Orient entertained so many Cincinnatians last winter. He travelled through Europe and parts of Asia and Africa, and stole into the hidden city of Petra, taking photographs at every place visited. His lectures were wonderfully fascinating.

It is estimated that at the present time not less than forty tons of silver and three tons of gold are used annually for photographic purposes in the United States. Taking the amount of gold and silver required for each cabinet picture, and finding the number of pictures that can be made with the amount of gold and silver above named, and the average price for which these cards are sold, it will be learned that the sum of \$27,080,000 is expended annually for photographs

A quartet of affable and courteous gentlemen connected with photographic art and present at the Convention are Messrs. Charles E. Smith, of Peoria, Ill.; Thomas Harrison, of Galesburg; Thomas W. Pattison, of Chicago, and Harry S. Suter, of Milwaukee. Pattison is of the well-known firm of Smith & Pattison, importers and manufacturers of supplies, and the other gentlemen are prominently identified with photography, and each has won high standing in the profession. The gentlemen take a lively interest in the annual meetings of the Association, and are always foremost in anything looking to the advancement of their art.

Mr. James Landy.—Our Illustration.

THE illustration for August is a portrait of Mr. Jas. Landy, of Cincinnati, the President elect of the P. A. of A. The negative was made in Mr. Landy's own establishment and will be acknowledged an excellent one. The prints are by our indotint process, and are good examples of their class.

Mr. Landy commenced the daguerrean art in 1850, under the auspices of Mr. S. A. Holmes. Remaining in this city for about nine years, he removed to Virginia, where after a brief sojourn of two years he went west to Cincinnati, where he has since resided for a period of twenty-one years.

Mr. Landy was always alone in his business ventures, and has always been successful. He was among the first to espouse the albumen print. His reputation was very greatly extended by the publication of

his renowned series entitled Shakespeare's Seven Ages, for which in conjunction with other works he became the fortunate recipient of three World's Fair medals and innumerable others. Another subject which merited universal admiration, and is now a cherished souvenir of the Emperor William, was his group of babes entitled "Expressive Pets." "Bulldozer" also reaped him a rich harvest, both in money and fame, 40,000 of which were sold during the first year of publication. Mr. Landy was born in this City, and has still a lingering regard for it. To-day he occupies one of the largest establishments of the kind in Cincinnati, consisting of two floors 40 x 82 feet each, on the corner of Fourth and Plum Streets, one of the finest localities in that city. His patrons are among the best, and his prices range from \$10 00 per dozen for cabinets to \$5 00 for C. de V., and \$5 00 for half a dozen children's portraits of the latter size, always payable in advance.

Mr. Landy was the originator of the plan for charging "take-overs," and gives as an excellent reason therefor, that he cannot conceive why a photographer any more than the dentist or physician, or any other professional, should work without pay.

Mr. L. has always enjoyed life, and always will, because when he works he gets full recompense.

His portrait proclaims what circumstances have proven him to be, a man of singular energy and intelligence, combined with a happy admixture of discretion, suavity and good nature.

The Suter Lens.

THE Messrs. Allen Bros., of Detroit, as seen elsewhere, have lately introduced the Suter lens, that seems to find favor. A line of them was shown at Cincinnati. (See adv.)

WE are sadly in need of some copies of the January BULLETIN. Has anyone a copy to spare? We will gladly remit stamps for return postage.

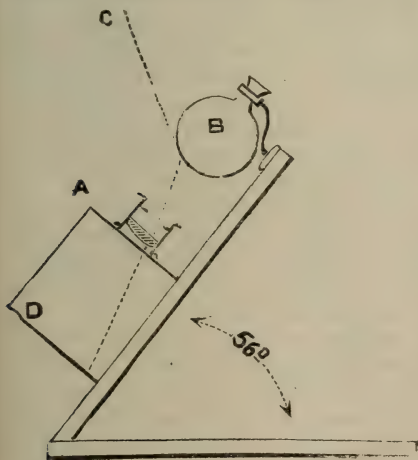
E. & H. T. ANTHONY & Co.

FOREIGN NOTES.

[FROM OUR LONDON CORRESPONDENT.]

A New Sunshine Recorder.—The various recorders in which the image of the sun is focussed by a sphere of glass on a strip of cardboard, thus being charred by the heat, generally fail at the two extremes—morning and evening—the apparatus being incapable of acting properly through the enormous angle of motion (apparent) of the sun. An arrangement involving the application of an ingenious idea is due to Prof. McLeod of Cooper's Hill College; the solar rays being so reflected from a spherical surface as to reduce the range of the sun's (apparent) motion brought within the range of an ordinary camera and lens. The sunshine recorder in question consists of a camera fixed with its axis parallel to that of the earth, and with the lens northward. Opposite to the lens there is placed a round-bottomed flask, silvered inside. The solar rays reflected from this sphere pass through the lens, and act on the sensitive surface.

The construction of the instrument is illustrated by the subjoined cut, A being a camera supported at an inclination of 56



degrees with the horizon, and B the spherical flask silvered inside, while at D is placed the ferro-prussiate paper destined to receive the solar impression. The dotted line, C, may represent the direction of the central

solar ray at one particular time, and it is easy to see how the sunlight reflected from the flask always passes through the lens. As the sun moves (apparently) in a circle round the flask, the image formed by the lens moves round on the sensitive paper, forming an arc of a circle.

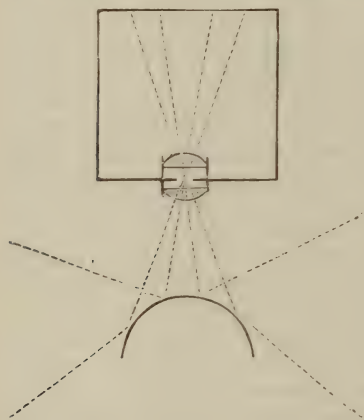
One great advantage of the McLeod recorder is the circumstance that by stopping down the lens the intensity of the action of light may be adapted to the sensitiveness of the prepared paper used in the camera, and that the solar record can thus be conveniently taken photographically rather than by the charring of a card. Paper made sensitive with a mixture of ferricyanide of potassium and ammonia-citrate of iron is extremely convenient for the purpose, and this is preferred by Mr. McLeod.

To prepare the paper, one part by weight of ferricyanide of potassium (red prussiate) is dissolved in eight parts of water, and one part of ammonia citrate of iron is added. This last addition must be made in the dark-room. A smooth faced paper is now floated on the liquid and allowed to dry in the dark. The paper keeps well, and after exposure it is merely necessary to soak the sheets in water to fix the impression. Your readers are aware that this is the ordinary ferro prussiate paper used by engineers for copying tracings.

Sun-dial and Panoramic Camera Founded on McLeod's Apparatus.—A friend has fixed a silvered glass ball outside the window of a room having a northern aspect and just inside the window, and in a position corresponding with that of the objective in the McLeod recorder he fixed a long-focus convex lens; the result being that the solar image was projected on the opposite wall, and the result was a sun-dial in which light spots move at a rate uniformly corresponding with the angular movement of the sun; excepting so far as the obliquity of the screen with the axis of the lens interferes. Certainly Prof. McLeod's arrangement should make one of the best forms of sun-dial. Another application of the principle, which I find suggested in the *Photographic News*, is to make it available

for the production of panoramic photographs—not indeed such pictures as the celebrated photograph of the Centennial, by Gutekunst, but distorted representations of the whole horizon, such as are produced by the photographic plane table of Chevallier. These photographs are likely to be of great value for surveying purposes, as they give the horizontal angle subtended by all objects by direct measurement of the photograph, and the elevation of the horizon line can be determined by a simple calculation. The journal referred to describes the arrangement as follows:

In order to make a preliminary experiment, one of the silvered glass balls sold for ornamental purposes was taken, and the camera was placed perpendicularly over it, as shown in the diagram. The result-



ing photograph was, of course, found to include the whole of the horizon, and a sufficient vertical angle for most surveying or military purposes.

When such an instrument is used in actual practice, it would doubtless be advantageous to place the reflector uppermost, so that the heavy portion—consisting of the camera—should be at the base.

In connection with this subject many points may be raised. In the first place, it would not do to use a glass reflector silvered inside; but as there is no difficulty in silvering the outer surface, it is not necessary to say more regarding this point. The

question of the shape of the reflector is one which cannot be determined without consideration, as under any circumstances the photographic representation will be very much distorted, and in making measurements from it the curve of the reflector will have to be known and taken into account. The spherical curve, a parabolic curve, and a cone suggest themselves for consideration.

It should, however, be quite possible—and, perhaps, convenient—to construct the reflector and part of the objective all in one piece, and this course would render it unnecessary to use any opaque support to hold the mirror in position.

Let us suppose a polished cylinder of glass, one end of which is concave and silvered inside, while the other extremity of the cylinder is so worked as to form part of the photographic objective. If this cylinder of glass were made to project from the mount, and the camera were set vertically, the light from the horizon, entering the cylinder, would be reflected from the silvered concavity at the top, and would pass downwards through the glass to the sensitive plate. Such an arrangement may be regarded as being virtually that figured above, but with the interspace between the outside of the objective and the reflector filled with glass, this glass being allowed for in the construction of the objective, just as is the case with the immersion fluid in which some microscopic lenses act.

The fixed arrangement referred to above would, besides possessing the advantage of having a mirror not subject to tarnishing, be far easier to adjust than an apparatus with a detached mirror.

It might be possible to construct special optical apparatus to undistort the photographs obtained by means of the instrument just described; but as such photographs would be taken mainly for making surveys and measurements, or for military purposes, there would be no special inducement to undistort them in ordinary cases.

Impure Sulphite of Soda.—In this country it is a very common thing to find that commercial sulphite of soda is contaminated

with a considerable proportion of carbonate, owing to carelessness in the manufacture, and in such a case much mischief may result from the use of the impure sulphite in the pyro-developer. A simple and effectual means of testing is suggested to the *Photographic News*. First put four drams of the sodium sulphite to be tested in a glass flask; add six fluid drams of water, and heat gently so as to cause the salt to dissolve. Allow the solution to cool down to about 85° Centigrade, and add a mixture of one fluid dram of strong hydrochloric acid, and two fluid drams of water. The slightest effervescence, or the formation of minute bubbles of gas on the sides of the flask, will indicate the presence of carbonate in the sulphite.

Dust Settling on Dry Plates During a Journey.—In spite of well made dark slides and careful wrapping up dust will penetrate, and settle on the sensitive surface of the plates, a multitude of pinholes being the result. To remedy this state of things Captain Abney recommends that the inside of the slides should be smeared over with a trace of glycerine, this serving to hold fast that dust which penetrates through the joints of the wood-work; of course the dust must be wiped off before fresh plates are put in, and, if necessary, fresh glycerine must be applied.

A Pyrotechnic Light Apparatus.—A simple and easily constructed pyrotechnic light apparatus is described in the *News* by Mr. E. Fearing, and he has more especially used it in making negatives in transfers for photo-lithographic work. He says:

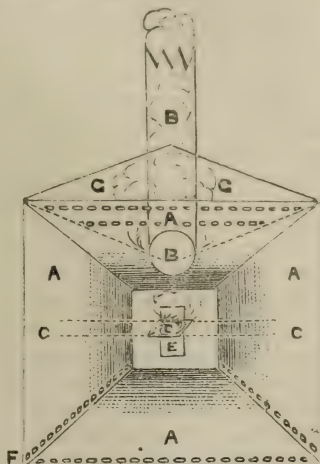
The lamp is made of $\frac{1}{2}$ inch deal; it is about 24 inches long from front to back; the front 18 inches square, the back 10 inches square; a glass in front, and a door in the back, and it is whitewashed inside.

To make the fine composition (pyrotechnic) suitable for the lighting of the picture to be copied, take of

Nitre,	17 pounds.
Sulphur,	6 "
Orpiment,	2½ "

Finely sift each separately, and then mix

carefully with the hands until thoroughly mixed together; the better they are mixed the steadier the light.



A A A A, Wooden box, whitewashed inside; B, Chimney to carry off fumes; C C, Two wires to carry the fire saucer; D, Fire saucer; E, Door in back of box for inserting fire pot; F, Ventillation holes, to make draught up chimney; G, Holes to take off smoke above glass.

To copy a 15-inch picture (line) down to a 12-inch for the above process, about four to six ounces of the mixture is put into the iron pan and ignited, and the reduced wet-plate negative will be finished, as far as the exposure goes. It may be printed, if the frame is held close to the glass of a lamp, with about four times the quantity of fire used in four batches.

I trust this may be of some use to some of your readers, as it often has been to me. But care must be taken to avoid inhaling the highly poisonous arsenical fumes resulting from the orpiment.

More Catalogues.

MR. GEO. P. ERKENBRACH, of No. 18. Bond Street this city, has just issued a neat little catalogue, embracing the more staple goods in the trade, especially those bearing our endorsement. On the front cover will be seen a good representation of an M Success Camera fitted with a Dallmeyer lens.

The Eastern Excursionists.

THE following invitation was mailed to the dealers in this vicinity:

DEAR SIR: The undersigned, who will represent

THE SCOVILL MANUFACTURING CO.,
E. & H. T. ANTHONY & CO.,
A. M. COLLINS, SON & CO.,

at the adjourned annual meeting of the Photographic Stock Dealers' Association of America, to be held at Cincinnati, July 28th, 1884, will leave New York by the Western Express at 6 o'clock P. M., Philadelphia at 9:10 P. M., on Friday July 25th. Should it accord with your convenience and preference to accompany us, it will afford us much pleasure to have you do so. Tickets may be procured one week in advance, at the offices of the Penn. R. R.

We are, very truly yours,

VINCENT M. WILCOX.

EDWARD COPE.

W. IRVING ADAMS.

July, 1884.

Agreeably with the above the Eastern Excursionists assembled at the appointed hour, and to the number of a score or more took their seats in one of the fine Pullman palace cars of the Pennsylvania Railroad, and quickly sped onward towards the Queen City of the West.

The gentlemen composing the party were—Mr. Washington I. Adams, of the Scovill Mfg Co., N. Y.; Hon. F. Hendricks, of Syracuse, N. Y.; Col. V. M. Wilcox, and Messrs. S. C. Crampton, W. H. Fuller, Lincoln Adams, D. A. Clifford, M. Flammang, and others of this city.

The party was joined at Philadelphia by Mr. Edward Cope, of the firm of A. M. Collins, Son & Co., T. H. McCollin, John Carbutt, John G. Hood, W. E. Service, and W. G. Entrekin, all of that city.

At Philadelphia the train went out in two sections, and in the latter were Messrs. Buchanan, of the firm of Buchanan, Smedley & Bromley, and Mr. Clements, the inventor of the Platinotype.

Breakfast was taken at Pittsburgh, and dinner at Columbus. The journey was a pleasant one, and rendered very agreeable by the genial companionship and liberal distribution of the luxuries of the season.

The political questions of the day were ably argued by the politicians of the party, and the success of the ticket is consequently assured.

CIRCULARS were freely distributed by some of the dealers and manufacturers in regard to certain goods they were desirous of bringing to public notice. Among them was one by the Eastman Dry Plate Company, calling general attention to the exhibits of Messrs. J. H. Kent and Sherman Gregg of Rochester. The fact that these exhibits were entirely voluntary, and not called forth by any so-called prize offers, rendered them of especial interest to the fraternity. Mr. Kent says, "I have used the Eastman Plate exclusively for upwards of two years, and will continue to do so." In the same circular Mr. Gregg stated—"My work exhibited at Cincinnati—size 22 x 27, plain portraiture—was printed from Eastman's Special Dry Plate, cut with rapid rectilinear Dallmeyer tube, with an average time of 40 seconds."

The Messrs. Anthony & Co., presented the members with a neat memorandum book, in Russia covers, on each page of which was printed the leading articles in their line on exhibition, leaving ample space for the notes of the possessor.

A very neat and stylish circular was also distributed by the Scovill Mfg Co., announcing their removal, and also the completion of their new factory and their ability to meet all demands for apparatus.

Demise of Mrs. B. L. H. Dabbs.

MRS. SARAH DABBS, wife of Mr. B. L. H. Dabbs, the well known photographer, died at her residence on Highland Avenue, East End, yesterday morning at twenty minutes after 4 o'clock. Her illness was comparatively brief. On Thursday evening of last

week she attended the summer night concert at Silver Lake Park, but did not have her carriage, and complained of feeling chilly. She returned home and went to bed, and during the night became quite ill. By morning the sickness had developed into an alarming attack of inflammation of the stomach. Dr. Murdock, who had been called to attend her summoned her father and brothers, the Drs. Dickson, but nothing could be done to save her life.

Mrs. Dabbs was the fourth daughter of Dr. John Dickson, and was married to Mr. Dabbs in January, 1868. She was in her 37th year at the time of her death, and leaves six small children, the youngest child being less than a year old. She was widely known in charitable, social and church circles in Pittsburgh, Allegheny and Sewickley. She invariably took a prominent part in all charitable entertainments, and was a prominent member and active worker in the North Side Hospital Association. Mrs. Dabbs was a devoted member and constant attendant of the Bellfield and East Liberty Presbyterian Churches, and was equally zealous in church work and its attendant labors of love among the poor and needy. The funeral services will take place at the family residence this afternoon at 5 o'clock, whence the remains will be conveyed by special train to Sewickley for interment tomorrow morning.—*Exchange.*

On Saturday week Mr. George M. Slee expired at Great Neck, N. Y. Deceased was a former resident of this city, and for years conducted a photographic gallery in connection with his brother William, on the corner of Main and Liberty streets. His health for some time past has been failing, and he visited Great Neck recently in hopes that the change would prove beneficial to him. Socially and in business life Mr. Slee made many friends wherever he moved, who will learn of his demise with unfeigned sorrow. The remains were interred in the Poughkeepsie Rural Cemetery on Thursday last, July 26.—*Poughkeepsie Courier.*

Dead.

THAT eminent photographer and writer, Mr. Jabez Hughes, of London, England, to whom both hemispheres are under lasting obligations alike for his many learned dissertations upon various subjects connected with the art and his artistic portrayals of the renowned and the obscure, has succumbed at last to the common enemy. The particulars have not yet reached us. *Requiescat in pace.*

An Infallible Cure for Fog.

SEÑOR ANTONIO MORENO, whose name many of our readers will recognize from having seen it attached to several beautiful illustrations that have appeared in the BULLETIN, now generously gives the fraternity the benefit of a discovery he has recently made in the restoration of hopelessly fogged gelatine negatives, the importance of which will not be underestimated by anyone who may have occasion to resort to its use.

Before describing it, we may be permitted to say that on the occasion of a recent visit to his establishment Mr. Moreno submitted for examination a number of excellent prints, all made from negatives that were originally badly fogged; and for our more complete satisfaction invited us to verify his statement by bringing some plates that were known to be positively bad, and observe the result. We did so, and on the next day proofs were received that confirm completely his claim.

Mr. Moreno, whose modesty is only exceeded by his ability, in a letter just at hand says:

NO. 4 E. 14TH ST., N. Y., Aug. 7, 1884.

"MY DEAR FRIEND:

"The negatives in my humble opinion (after this treatment) are not bad, having plenty of force, sufficient detail and much clearness, which appear to me to be the conditions a good negative should possess.

"I hardly know what to say about their development, because I work with the formulas known to all photographers.

"I began with the oxalate, and always ob-

tained good results, leaving nothing to be desired. Afterwards for some months I used the Wardlaw developer, which also rendered good negatives, and now I use that recommended by Mr. Eastman for his plates, composed of pyrogallic acid, carbonate of soda and sulphite of soda, which is precisely what these negatives have been developed with.

"I don't know that I can explain the subsequent operations so that it will be understood, but will say that when I find the plates bad, I give the subjects (portraits) a little more exposure than if they were good.

"To develop I begin with a weak bath, in which I put a little bromide of potassium. If I see that the action is tardy I put the negative in a strong bath that has no bromide.

"Sometimes they will come out of this bath perfect; but generally it is much better to withdraw them before they have sufficient intensity and reinforce *after fixing*.

"To intensify I use a bath composed of bichloride of mercury, iodide of potassium, and hyposulphite of soda. This leaves the negative an ugly yellow color, which *disappears in another bath of alum* with a small quantity of hypo. added.

"I hardly think these instructions will be sufficient, and it would be much better that whoever may choose to avail of them should come to my gallery of an evening, when the plates are being developed, and I shall have no objection in demonstrating to any one as best I can.

"I am an enemy of keeping secrets, and cannot find it in my heart to concur with those photographers who might learn much that they do not know, and demonstrate that which is already in one's power to discover."

Mr. Moreno also placed before us some very excellent and artistically posed heads, busts, etc., on 11 x 14 plates, prints from which would be valued greatly by the craft simply as studies. It is rare that such fine work photographically or artistically is shown.

The Photographic Merchants' Board of Trade.

THE sixth meeting of this Association convened at the Burnet House in Cincinnati on July 28. There was a large attendance, all the leading houses being represented. The officers elected for the ensuing year are—

President --H. Q. SARGENT, Cleveland.

First Vice-pres.—B. FRENCH, Boston.

Sec. Vice-pres.—D. TUCKER, Buffalo.

Third Vice pres.—G. A. DOUGLASS, Chicago.

Sec'y.—GEO. R. ANGELL, Detroit.

Treas.—J. C. SOMERVILLE, St. Louis.

Managers.—W. I. ADAMS, New York.

D. K. CADY, Cincinnati,

EDWARD COPE, Phila.

V. M. WILCOX, New York.

E. O. ZIMMERMAN, St. P'l.

The report of the Treasurer was received and accepted.

Resolutions of condolence as adopted by the officers in September last (already published), in behalf of the first Vice-president, Mr. C. H. Codman, were concurred in by the Board. On an easel before the assembled gentlemen was an admirable life size crayon portrait of Mr. Codman, suitably framed, and after the usual routine a pleasant interruption of the business was the occasion of its presentation to Mr. Angell through Col. Wilcox, who said:

"MR. PRESIDENT AND GENTLEMEN: A pleasant office has been assigned to me, the presentation to our Secretary of this beautiful portrait of the late Mr. C. H. Codman, our friend and one of the officers of this Association, the gift of his widow and the gentlemen with whom he was associated in business. Since already appropriate resolutions have been passed, both by the managers and this Association itself, which expresses so completely our sympathy and our appreciation of his worth, there seems to be but little for me to say; yet I feel that upon this occasion, fraught as it is with sad recollections of his untimely decease, I should add a few words from my own knowledge. It gives me pleasure to think of him as a man true, honest and upright in all his actions and in all his business relations with the house which I represent, and with me personally, and of that in life which is honorable; he made the most and did all that lay in his power that every transaction with his fellow men should be characterized by honesty. So I shall always carry with me pleasant recollections of our friendship, recollections made more enduring because our friend has passed into the great unknown.

"Your great admiration of and respect for

Mr. Codman is well known to us, Mr. Angell, and also your high regard for his associates in business, Messrs. Roby & Horgan. Recognizing these facts in behalf, then, of Mrs. Codman and the partners of our late friend, I ask you to accept this portrait, that it may be to you a memorial as lasting as is the affection we felt towards the deceased, of the respect in which we held him, and of the honor we are in duty bound to pay to an honest and upright man."

The Secretary accepted the gift with great pleasure, feeling that in the presence of the portrait of a good man there was ever an incentive to better deeds, and desired Col. Wilcox to convey to the donors his warmest thanks for their kind remembrance of him. Mr. Angell, in recording the minutes, has modestly omitted the major part of his response.

After deciding upon New York City as the place for holding the next annual meeting on Tuesday, February 10, 1885, and passing a vote of thanks to the Secretary, the Association adjourned.

How to Photograph Microscopic Objects.

BY I. H. JENNINGS.

Introduction.

PHOTO-MICROGRAPHY is the art of making, by means of the microscope, photographic enlargements of microscopic objects. Properly employed it forms a valuable tool in the apparatus of the scientific worker, for, by its aid, he can record faithfully the results of the difficult and delicate observations, or delineate the forms of minute bodies concerning whose true structure different observers may vary in opinion. A photo-micrograph allows no room for play of the imagination: it simply shows how a given object appeared at the time the observation was made. Seriously carried out, and more especially when using high powers, photo-micrography is hard and trying work. The arrangement of the apparatus, the placing and illumination of the object, are tedious and difficult. Beginners in this fascinating and important art are warned that they must be prepared

to encounter not only all the difficulties and troubles incident to ordinary photography, but also others of a different nature peculiar to photo-micrography.

To become a skillful photo-micrographer it is first necessary to be a skillful microscopist; for if the operator does not know how to display an object to the best advantage, his photographs will be useless. Yet the microscopist who comes fresh to photographic operations will find himself in a sea of troubles, spoil a number of plates, produce failure after failure, and, perhaps, throw up photo-micrography in disgust. The writer would advise all who contemplate a beginning to first make themselves acquainted with landscape photography, and all ordinary photographic manipulation; this need involve little extra expense, and the profit and pleasure to be gained from this course will amply repay any little additional outlay. One of the most skillful photo-micrographers that the writer ever knew was a gentleman who employed the microscope regularly as an instrument of research, but who used the camera only on his holiday trips. Being engaged in writing a paper which required illustration, it occurred to him to try photo-micrography, as the objects which he wished to depict were beyond the skill of the engraver. He did so, and succeeded at once.

Beginners in photo-micrography should bear in mind: 1st. That they should themselves develop every plate they expose; 2nd. That the best results need not be expected unless they are also able to make their own silver prints. A professional photographer may be at landscape and portrait work, but this does not show that he is fit to be entrusted with negatives of microscopic objects. To bring out the details of a photo-micrographic negative of a print properly, requires that the operator should thoroughly understand the nature of the object; and this cannot be done except by a microscopist.

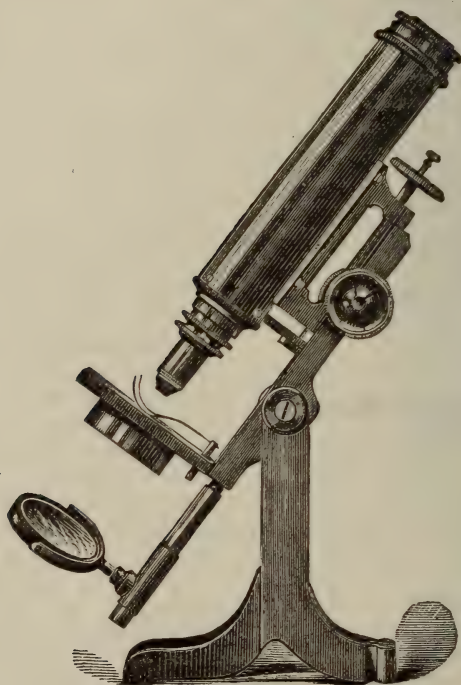
All objects are not suited for photo-micrography. Very opaque ones are not the worst, but those which have any strong tint of red, brown or yellow. On this account

many beautiful insect preparations cannot be photographed successfully; and we would, therefore, advise the beginner to study the preparation of microscopic objects, so as to be able, in case of need, to prepare and mount his own objects. As an example, a fly's tongue forms a pretty microscopic object, and most of the slides met with are tolerably good; yet a photograph taken from these ordinary slides usually is a

complete failure. The reason is, that the unequal transparency of the object makes some parts over exposed, while, in the darker parts, detail has not impressed the film. Here the best way is to make, or have made, a special preparation.

LESSON I.—MICROSCOPICAL APPARATUS.

Any good microscope stand may be employed for photo-micrography. It must be



really good; an inferior instrument is useless. It must be firmly and solidly built, and the fine and coarse adjustments should be of the best construction. One of the cheap microscopes, with a fine adjustment that gradually moves the object from the field of view on being turned, will be found a source of continual annoyance, and should be avoided. If the student have, by ignorance or ill-advice, one of these things, let him part with it at any price, and procure one of the low-priced, but firmly built, well-adjusted stands made by Beck, Collins,

Ross, or Swift. These will be found to give ample satisfaction.

The stand figured above, made by Mr. Collins, of Portland Street, (London,) is well suited to photo-micrographic work. It is well made, takes the full size eye-pieces, is furnished with a good one-inch and quarter-inch, and costs, with case, only £5 10s. A beginner could not have a better instrument. The writer uses a stand by Swift, which has a coarse adjustment so good that a $\frac{1}{12}$ th or $\frac{1}{16}$ th inch may be focussed with ease and precision with it alone. The

shape of the microscope is immaterial; both Ross and Jackson models will give good results if well made. A graduated draw-tube should be obtained, which had best be velvet-lined, to prevent flare. The usual dead black, after a while, wears out of the draw-tube, and renders the microscope useless for photography; thus a more durable material, such as cloth or velvet, should be used to prevent reflection from the sides of the tube.

Several of the continental models, such as Hartnack's, would be useful for photography, from their compact shape and solidity; but their narrow body-tube, which limits the field of view most seriously, and cramped stage, render it advisable to use only English instruments of the latest pattern. If cost be no consideration, then there is nothing to equal one of the large, first-class microscopes of the best English makers, fitted with every possible convenience in stage and sub-stage. It is true, an expert manipulator will obtain excellent results with the simplest arrangements; but it is no less true that it is the expert alone who can really appreciate and turn to good account the delicate mechanical contrivances which the skill of the optician has devised for his aid. Thus, a mechanical stage is not absolutely necessary, but it is a great help when working with high powers; and with the very highest powers it is hard to see how it can be dispensed with. The same may be said of the sub stage; but as this is in some respects more generally useful than the mechanical stage, it should be applied to all microscopes with which an achromatic condenser or paraboloid is to be used. The objections to the tube-fitting usually supplied with student's microscopes are, the difficulty of properly adjusting the sub stage apparatus, and the very thick upper stage that they necessitate. For photographic work, the upper stage should be as thin as possible, certainly not more than $\frac{1}{8}$ inch thick, for frequently very oblique light must be employed, and this cannot be done with a thick stage, which cuts off the rays. Using a thin stage and bull's eye lens, it is astonishing how

easily a difficult diatom may be resolved, which, with a thick stage, would require the use of an expensive condenser. Most of the English makers now fit their microscopes with thin concentric stages, even when the rack and pinion movement is omitted.

As to lenses, the student is advised strongly to buy the very best, if possible. Let him shun cheap French lenses, more especially the separating lenses, styled "French buttons," which are frequently supplied with £5 or £6 microscopes, and which are only useless rubbish. The stand and lenses should be purchased separately, the latter to suit the requirements of a photo-micrographer. If the very best lenses are too expensive, then purchase some of the cheap low angle lenses, now sold by most good makers, for these, being well corrected up to the angle ascribed to them, are capable of performing a vast amount of real work. The beginner will probably find them much easier to handle than lenses of wider aperture, owing to their greater penetration and working distance; but the more experienced worker will require, especially for photographing very minute objects, lenses of the widest possible angle. Lenses of wide angle admit more light, and have far greater resolving power than lenses of low angle; but they have less working distance; and less penetration. The fact that they almost touch the object, in many cases, when in focus, forms no objection to their use for photography, but it is annoying to have a lens, say a $\frac{1}{4}$ -inch, that will only show the surfaces of objects. This objection, however, can be easily disposed of, by using a contracting diaphragm such as the "Davis Aperture Shutter," made and sold by Mr. Collins, whenever penetration is desired. The use of this shutter renders a lens of widest angle equal to any low angle lens, as far as penetration is concerned; while even with this shutter, the wide angle lens will give superior definition and admit more light than a low angle lens of the same focus.

The choice of lenses will depend, in a great measure, on the photographic work to

be performed. If the beginner proposes to limit himself to the photography of comparatively easy objects, lenses of 2-inch, 1-inch, $\frac{1}{2}$ -inch, $\frac{1}{4}$ -inch, will suffice. A $\frac{1}{4}$ inch of wide angle will be found capable of resolving the majority of test objects satisfac-

torily. A 5-inch or 4-inch will be found very useful for photographing large objects, such as whole insects, wood sections, and anatomical preparations; while if the student requires a few high powers, and cannot afford the expensive ones of the best



LEG OF WATER BOATMAN (NOTONECTA).

Taken with a Ross 4-inch.

English makers, he will find the moderate priced immersion lenses of Seibert equal to all the work that will generally be required of them. These lenses are sold by Baker, of Holborn. Immersion lenses are specially useful in photography, as they admit a vast amount of light, and are, therefore, very rapid in action.

Some lenses are not well suited to photo-micrography, their visual and actinic foci not being coincident; that is, when an object is focussed accurately on the screen of the camera, and a photograph taken, the picture will be indistinct and blurred, owing to the fact that the rays forming the visual image do not lie in the same plane as those forming the photographic image. Such

lenses *may* be used for photography, by making experiments and determining the amount of allowance for this difference to be made when focussing; but it is far more satisfactory to use lenses which do not require such correction. The writer has used lenses by Ross, Wale, Swift, and Seibert, and the visual and actinic foci were coincident in all such as he has used.

Much difference of opinion prevails as to whether the eye-piece should or should not be used in photo-micrography. Some assert that the eye-piece spoils good definition. This is possible with a bad eye-piece; but the writer has for years used the eye-piece when photographing with low powers, and has found no difficulty in ob-

taining photographs absolutely sharp and well-defined to the very edge of the field. This is also the experience of many other photo-micrographers. In the writer's opinion it is a mere question of convenience; with low powers—say up to $\frac{1}{4}$ -inch—the eye-piece may be employed, as the loss of light attending its use is very slight; but with higher powers the loss becomes a serious matter, so it is then necessary to discard the eye-piece, or focussing will be very difficult, and the exposure of the plate inconveniently long.

An achromatic condenser is a very useful piece of apparatus, but may be dispensed with for general work; however, a good one will save much labor and “dodging,” when using high powers with difficult objects. A bull's-eye lens accompanies most microscopes, and is really invaluable when the photo-micrographer has learnt how to use it. For a very oblique light a hemispherical lens is as good as anything. It is attached to the under-side of the slide with glycerine, and used in conjunction with the bull's-eye, the best position being found for the lens by experiment. As it will not keep in place unless the microscope be kept vertical, a slip of cardboard should be fastened to the slide below the hemispherical lens, or a little gum may be added to the glycerine. Unless the gum be perfectly white, it had best be avoided, as a yellow tint would ruin definition.

The paraboloid and spot-lens are sometimes used in photo-micrography, but even with the most rapid dry plates, dark ground illumination is difficult, and seldom successful. As it, however, shows many objects to better advantage than any other mode of lighting, the student is recommended to see what results he can gain by its use.

(To be continued.)

DEAR BULLETIN:

In glancing over the February number of your meritorious work entitled the PHOTOGRAPHIC BULLETIN, and being highly amused with the incidents related by Mr. Bogardus in his “Thirty-seven Years Be-

hind a Camera,” it recalled to me something in my own experience that was quite diverting. An old lady called one dark day for a sitting, and the operator being out and not wishing to lose a customer or money, a friend of his, but not a photographer, said he would pose the lady. He did so, pointed the camera, told her it would be a long sitting (it was before the dry plate era), and to wink her eyes occasionally to relieve them. He then returned to a game of euchre he had left to attend to the old lady and forgot entirely about her, so absorbed was he in the game. Suddenly he started up, and said—by George, boys, I have forgotten the old lady! He immediately repaired to the skylight and found the antiquated specimen of female loveliness rambling about the room. He politely told her it was all right, and would send her a proof in the morning; but, she said: Sir, “I have been walking about all the time.” He replied, “No matter at all, Madam; a few touches of the brush will make it all right.” OLD PHOTOGRAPHER

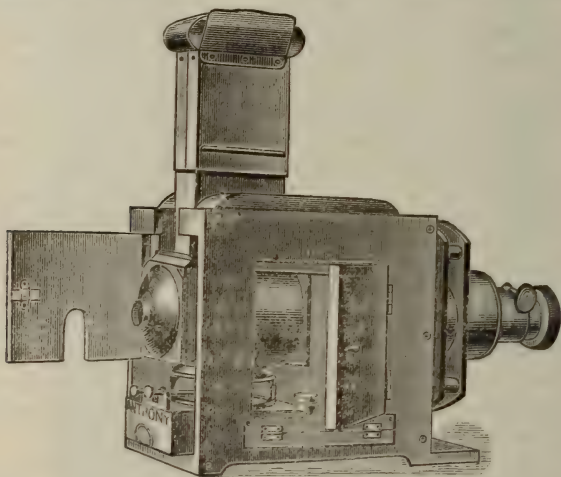
ALDERMAN W. E. HART has fitted up his new photographic rooms in the third story of the new Agricultural Building in elegant style. Entering a cosy reception room, to the right the visitor finds two large and finely furnished reception rooms, while to the left is the gallery proper. The latest conveniences known to the photographic art are displayed, while the north light is an excellent adjunct in assisting Mr. Hart in the taking of good pictures. One of E. & H. T. Anthony & Co's cameras finds place on the floor. It is fitted up with Dallmeyer's celebrated English and some imported Swiss lenses. The handsome background scenes are from L. W. Seavey, of New York. The rooms are heated by steam, and are easy of access. Ald. Hart is to be congratulated on his new location.—*Watertown Daily Times.*

HAS any one a spare copy of the BULLETIN for January, this year. We have none left, and would be glad to obtain a few.

A New and Splendid Magic Lantern.— Anthony's Triplex Wick.

WE have seen many lanterns in our time, but in several respects this eclipses them all, especially of those for use with kerosene oil only. The lamp itself is completely shielded with a well made hood of Russia iron, and is provided with the patent triplex

wick, which affords the utmost illumination obtainable with any oil light. The back and front of the hood are closed interiorly by glass plates, specially annealed to withstand extreme heat, and the rear one is again closed by perforated sheet iron covered interiorly with a highly polished metallic reflector, back of which is inserted an eye-piece of ruby glass. The latter enables



one to always observe the condition of the flame and wicks, and regulate them, without disturbing or discontinuing the action of the instrument. The chimney is made telescopic, to pack more compactly.

The diffusing lens, specially constructed for the purpose, is mounted on a cylindrical slide, to extend, if necessary, the focal distance, while the condensing lenses, which are of four inch diameter and can be separated for cleaning, are inserted in a corresponding slide within the wooden case.

The case itself is quite compact, and appears very ornamental in its highly polished

mahogany, with its little hinged ventilators on either side at the bottom. The metal front is burnished and has a spiral spring adapter for the admission of the slides. A substantial wooden box contains all, and serves also as a table for the instrument while in use. Altogether this is the finest example of its kind we have yet seen. It will also serve admirably for enlargements with the gelatino-bromide paper.

It is destined to become very popular, being furnished at the very reasonable price of \$40.

E. & H. T. ANTHONY & Co.

THE Society of the Amateur Photographers of New York have discussed the propriety of going to Mauch Chunk on their next excursion. A gentleman who has recently visited that part of the country with his camera, states that it offers some very favorable subjects, and tells us that by far the greater proportion of the best views in

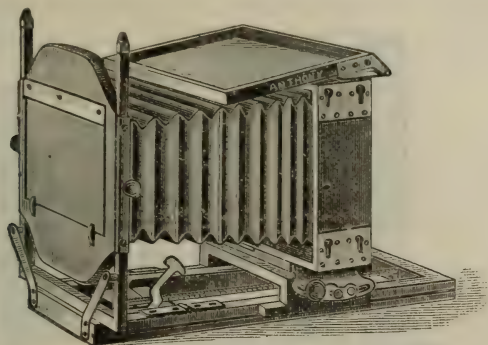
that vicinity have not yet been taken, and that the opportunities not only for landscape work but also for the use of the drop shutter are unlimited, and in many respects unsurpassed.

In our next number we may give a description of the many points of interest; the Lehigh Valley Road offers the easiest access.

The Fairy Novel Camera.

It has long been our desire to place before the public a camera that would at once embrace these most necessary requirements—portability, compactness, and strength, combined with beauty and accuracy of working.

Hitherto the nearest approach to this has been the "Novel" camera, which for a time seemed to be everything that could be desired. But urgent calls for something still better were frequently made, and we therefore devised the FAIRY NOVEL, by far the most attractive and elegant camera ever offered. In presenting it

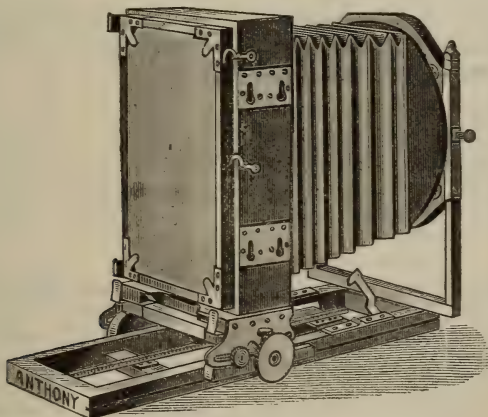


With stereo. attachments, when used horizontally.

we invite attention to the following advantages it possesses over all others.

Strength.—They are put together as rigidly as wood and metal will admit of, and are therefore *perfectly* rigid.

Compactness.—They occupy less space than any other view cameras of the same capacity, and the plate-holders actually require little more than one-half the room of the lightest of any others in use. The plate-holders are made



5 x 8 with stereo. attachments, used vertically.

of hard wood, with metal carriers for the plates, and fitted with all the later improvements.

Portability.—The small compass to which they may be reduced render them in this respect incomparably superior to any. They are packed in canvas-covered wooden cases—and

each double plate-holder has its own compartment. The cover of the case telescopes over its body.

Several new features have been availed of in the construction of this camera, to wit: The bed may be instantly rendered rigid, *without*

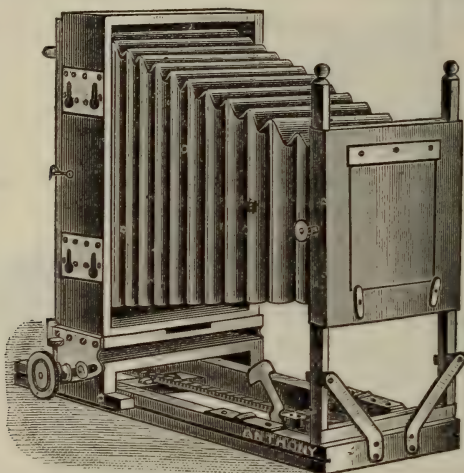
the use of screws, by means of a brace of hooks that hold the two sections of the bed with great firmness.

Secondly.—The rabbit commonly found on the plate-holder is dispensed with, and instead it is placed on the camera, thus saving the otherwise additional weight rendered necessary for twelve such rabbits when made on the

plate-holders (two on each of the six usually carried), and the no inconsiderable item of three-quarters of an inch in bulk.

Third.—The Camera is focussed with a long, continuous metallic rack, cog wheel and pinion, the latter being held firmly in position by a binding screw.

The ground glass swings backward in its



Without stereo. attachment.

frame, like that in the regular Novel Camera, and is held tightly in position by metallic spring corners. When windy, this is a decided advantage.

The Fairy Camera is made in finely polished mahogany, the metal work being nickel-plated, thus making it the most elegant and perfect camera known.

At present they may be had in four sizes, as follows:

Including one Double Dry Plate-Holder.

4¼ x 6½, without stereo. attachments,	\$40 00
5 x 8, " " "	42 00
5 x 8, with " "	42 00
6½ x 8½, " " "	45 00
8 x 10, " " "	50 00

Including six Double Dry Plate-Holders.

4¼ x 6½, without stereo. attachments,	\$52 00
5 x 8, " " "	55 00
5 x 8, with " " "	55 00
6½ x 8½, " " "	65 00
8 x 10, " " "	75 00

Fairy Plate-Holders only.

4¼ x 6½, each,	\$3 00
5 x 8, "	3 00
6½ x 8½, "	5 00
8 x 10, "	6 00

Naturally, those without stereoscopic attachments are still lighter and a trifle more compact than those with, and may be preferred by persons who desire to make single portraits or views only.

The above may be procured of all dealers.

E. & H. T. ANTHONY & Co.

MR. A. V. BROWN, of Springfield, Mass., a late arrival in that city, has recently introduced the electric light in his gallery for portraiture. He sends us an example, that does him great credit. The picture is exceedingly soft and delicate, but might possess a little more contrast.

Three lights are arranged triangularly. The negative was made on Eastman's Special Plate with Dallmeyer's 3 A portrait lens. This is another instance of the successful use of the electric light for portrait photography.

ANTHONY'S PHOTOGRAPHIC BULLETIN

FOR SEPTEMBER, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

Page, for a single issue,	\$15
Half page, " "	8
Quarter page, " "	5
Eighth page, " "	3
Special Notices, per line,	25 Cents.

—♦—

Anthony's

Photographic Bulletin,

ILLUSTRATED.

Terms for 1884: Two Dollars.

Unillustrated, One Dollar.

Payable in Advance,

And only to those who pay.

VOL. XV.—27

Transparent Oil Colors for Painting Lantern Transparencies.

J. JOBSON has experienced some difficulty in obtaining transparent oil colors for painting lantern transparencies. Those he has secured are somewhat opaque and lacking in brilliancy. This is especially the case with the greens and reds. He inquires, too, if there be no better yellow than gamboge.—In reply: Our correspondent is not the only one who has experienced the difficulty just described. We are pleased at being in a position to indicate a termination to his troubles. Mr. Newman, of Soho Square, has succeeded in producing some transparent oil colors that are simply admirable. A green, which is very brilliant and perfectly transparent, is issued by this firm in small tubes, under the designation of "chromium green oxide," which is a most useful color, answering well for foliage. The "carmine madder" of this firm is the most brilliant red that is necessary, and is quite transparent; equally transparent is a new yellow, which is issued under the name of "aureolin." We are glad that a firm of such high reputation as that of Newman is bestowing attention upon the more difficult class of transparent colors for lantern pictures.—*British Journal of Photography.*

TRY Anthony's New Transparency Plates.

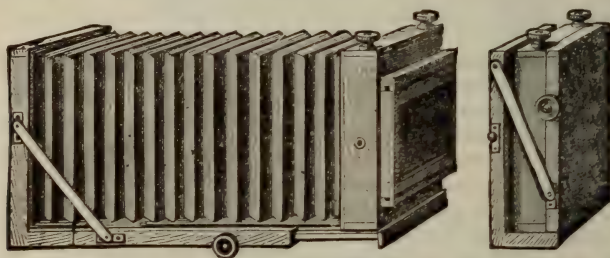
How to Photograph Microscopic Objects.

BY I. H. JENNINGS.

LESSON II.—PHOTOGRAPHIC APPARATUS.

FOR simple photo-micrographic operations, any ordinary camera may be employed. A quarter-plate camera will answer, but the student is advised to obtain a half-plate or even a whole-plate camera, for, as he advances in skill, he will, perhaps, wish to photograph sections of rocks, or woods, or whole insects, on a larger scale than the smaller camera will allow. A good lens

will make a half or whole-plate enlargement of an object without loss of definition. Using the eye-piece, and working with low powers, a camera expanding to eighteen inches or two feet will suffice, but for the higher powers, which cannot well be used in conjunction with the eye-piece, a camera, expanding to four feet, or even six feet, is recommended. The eye-piece cuts off so much light when working with high-power lenses, that focussing becomes difficult, if not impossible; while without it, focussing with a $\frac{1}{2}$ th inch or $\frac{1}{4}$ th inch is an easy matter, even when a condenser is not employed.



LONG FOCUS CAMERA, SUITABLE FOR PHOTO-MICROGRAPHY.

If an ordinary camera be employed,* there are none better than those sold under the name of "long focus" cameras. The half-plate size expands from three inches to eighteen or twenty inches, which is ample for low powers, especially when looking with the eye-piece. The above illustration shows a capital "long focus" camera introduced by Hare, which will answer both for landscape and microscopic work, and forms an excellent companion for the summer holidays, when the microscope will be, or ought to be, laid aside. Even the expert photo-micrographer will find the occasional practice of landscape photography a very good way of "keeping his hands in."

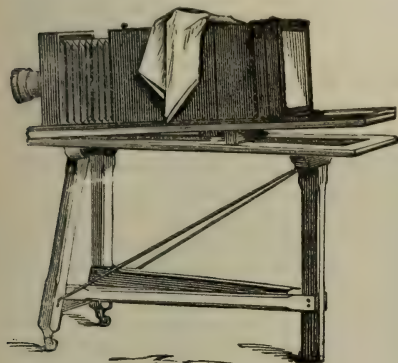
A long copying camera, provided with focussing arrangements back and front, makes a very excellent camera for photo-micrography. It is very desirable that the

front should not be fixed to the base-board, but be capable of either sliding back or moving back by screw, for frequently it may be necessary, after all is ready for taking a photograph, either to change the position of the object, or alter the illumination, which can be satisfactorily performed only by looking down the microscope tube. If the camera has to be removed for this purpose, there will be some difficulty in getting everything square again; while if the camera front can slide back along the base-board, the relative position of microscope and screen remains unaltered. Copying cameras suitable for photo-micrography are to be met with in the lists of most dealers.

If the student cannot procure one of these cameras, he may very easily construct one for himself. Procure four boards nicely planed, $\frac{1}{4}$ -inch thick, some inches longer than the proposed camera, and $\frac{1}{4}$ -inch less in width than the bellows are required. Make a long box with the boards, fastening

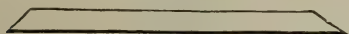
* Similar photographic apparatus to that mentioned, may be procured of us of our own manufacture.—E. & H. T. Anthony & Co.

them together at the ends only with screws. Cover this box with thin black calico or book-binder's cloth, pasting the edges to-



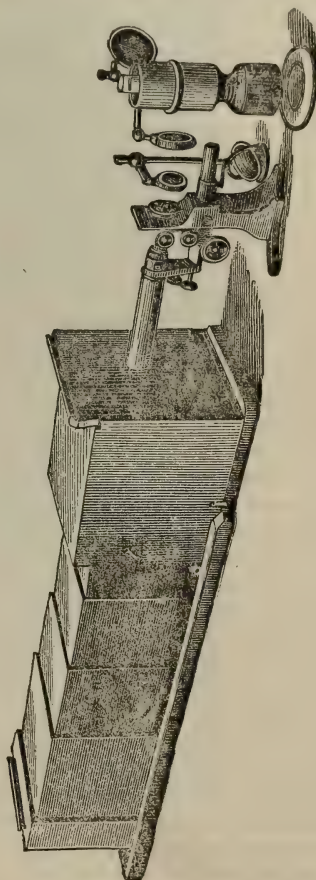
COPYING CAMERA.

gether where they lap over. Next cut some slips of thin cardboard $\frac{1}{8}$ -inch or $\frac{3}{16}$ -inch wide, and $\frac{1}{8}$ -inch shorter than the width of the box. Cut the corners of each slip at an angle more acute than 45° , thus:



When sufficient have been cut, paste the slips exactly parallel on the four sides of the box, about $\frac{1}{8}$ -inch or $\frac{1}{16}$ -inch apart. Each slip must be pasted on with the cut-off ends facing in the same direction. When the paste is dry, put on an outer cover of better material; twilled calico will do, but is somewhat thick for the purpose; good book-binder's cloth is best. The edges should be pasted together as neatly as possible. When the whole is dry, unfasten the end screws, when the boards will collapse, and the bellows can be drawn off. Now proceed to fold it up carefully, by pinching it into shape at the edges of the slips of cardboard, and put the bellows in a copying press, or under heavy weights, for a day or two. The base-board for this bellows should extend in front about 3 feet, so that the microscope and lamp may stand upon it. As the bellows will require no protection, the camera front may consist of a plain vertical board, of the right size constructed to slide back on the base-board about 15 or

18 inches. The dark slide should be purchased, preferably a single one, and the back of the camera made to fit it. The camera may be opened or closed by hand alone, the back moving in guides screwed along each side of the base board; or by endless screws cut with a rather coarse thread. When the endless screw is not used, a screw and but-



terfly nut must be employed, to clamp the camera in any desired position.

If the student has not sufficient hand skill to construct a bellows camera he may make, or have made the simpler arrangement represented below. As will be seen, it consists of a series of boxes fitting into each other after the fashion of a sliding body camera. It can easily be lengthened or

shortened by the addition or removal of one or more boxes. Any joiner could easily construct such a camera on seeing the illustration.

Double dark slides may be employed, if well made, but a single slide is better, as the focussing glass can be placed in it, and when replaced by the sensitive plate the latter will lie in exactly the same place, which is of vital importance. For low powers, very fine ground glass will answer, but for higher powers plain glass is best. In this case the image must be examined by means of a focussing eye-piece. The following excellent mode of performing the difficult operation of focussing is given by Mr. G. E. Davis, in "Practical Microscopy:" "Removing the ground glass slide, another is substituted of mahogany, but pierced with a series of seven holes, into each of which the ordinary A eye-piece may be fixed. The thickness of the slide is such that when the eye piece is pushed in as far as it will go, the diaphragm lies in the same plane as the ground surface of the glass slide. To anyone accustomed to focus by the old method, the present system will be found a considerable improvement, it being easy under these conditions to obtain a sharp focus with an ordinary paraffine lamp when using the $\frac{1}{16}$ objective."

When the camera is extended only a short distance, the hand will be able to reach the coarse or fine adjustments of the microscope; but when drawn out to three feet or four feet, this will be impossible. It then becomes necessary to provide some method by which focussing can be easily and exactly performed while viewing the image on the screen, the camera being extended. Procure a hollow brass rod, $\frac{1}{2}$ inch in diameter, and the length of the base-board. Fix it to the side of the board by metal "eyes," so that the rod may revolve somewhat stiffly; if the camera be supported on trestles, the rod may be fixed under the base-board, which is more convenient. Make a grooved wooden wheel, two inches diameter, and fasten it to the rod, so that it will be opposite the fine adjustment of the microscope when the latter is placed horizontally, with the eye-

piece end fitted to the camera front. Make an endless band of narrow tape, of such a length that it will pass over the grooved wheel and the fine adjustment rather tightly. On turning the extremity of the rod, the fine adjustment will be moved with sufficient slowness and accuracy to allow of correct focussing with a lens of high power. The writer has long used an arrangement of this sort when photographing diatoms, and found it answer admirably.

The remaining photographic apparatus will be as follows: A macintosh focussing-cloth; ebonite or glass dishes for developing and fixing negatives; glass measures, say 2-oz., 4 oz., and 6-oz. capacity; basins for washing negatives; a porcelain dish for toning prints, and another for fixing them. Racks may be used for drying the negatives, but in winter, standing them up on a warm mantle-piece is as good a plan as any, unless the plates be made with very soft gelatine, when catastrophes may be expected in the shape of distortion of the image, or even melting of the gelatine.

LESSON III—ILLUMINATING APPARATUS.

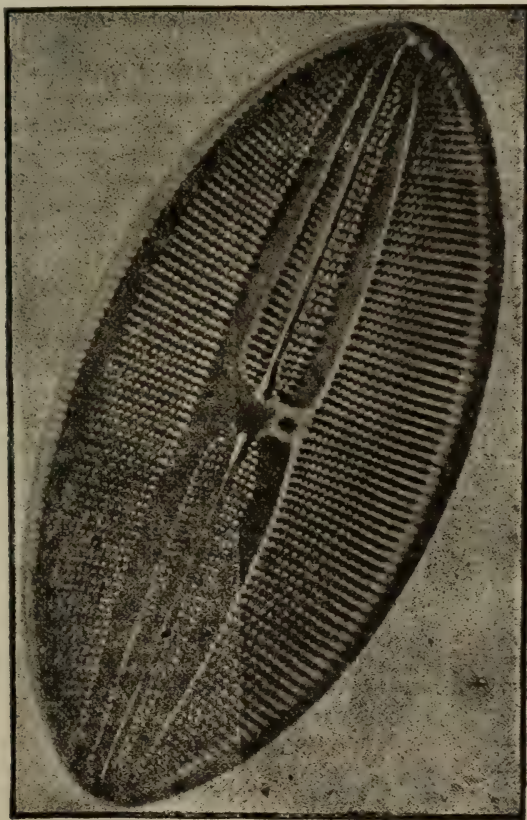
In this country photo-micrography by daylight is troublesome and unsatisfactory. The sun shines brightly during so few months of the year, and is so fickle when he makes his appearance that the photo-micrographer is compelled to fall back on artificial light to do his work. In many respects sunlight would be preferable, were it only always at the command of the photo-micrographer; it costs nothing, is rapid in its action, is more powerful than any other light, and exhibits objects illumined by it as we are accustomed to see them. The chief disadvantage of using the sun as a source of light is, that, owing to the earth's motion, the direction of the light is continually altering, necessitating the use of an expensive reflecting instrument, called a heliostat, to keep the rays constantly in any required direction.

The use of artificial light has been condemned by many. One photo-micrographer even goes so far as to say "artificial light is a delusion;" but on comparing results we

shall find that, at least since the advent of rapid dry plates, photo-micrographs have been taken by many workers fully equal to any produced by daylight. In fact, certain photo-micrographers who have most strongly advocated the use of sunlight, have not produced work even equal to that which may be done by any manipulator of moder-

ate ability with artificial light after a few months' practice. Artificial light is much more easy to manage than daylight, and does not vary so much in actinic quality; hence exposures are easy to calculate, and the illumination is more completely under control.

The light given by burning magnesium



NAVICULA LYRA, $\times 900$.

Taken with a Siebert's $\frac{1}{16}$ immersion: Exposure about fifteen seconds to magnesium ribbon in a holder.

is the richest in actinic rays. If the student possesses a Solomon's magnesium lamp, he will find no difficulty in working with this light, the only objection to the lamp being that it consumes the magnesium rather rapidly, and thus becomes too expensive to be used constantly. It may, however, be used

with great advantage when photographing very minute objects with high powers. The most economical mode of using magnesium ribbon is to burn it in a holder made of tin or brass tube, the bore being just large enough to admit the easy passage of the ribbon. The tube should be about six

inches long, and mounted on a stand similar to that of the bull's eye condenser, with joints to admit of proper adjustment.

When using the holder, a spirit lamp should be placed opposite the achromatic or other condenser, and the magnesium holder placed in such a position that when the ribbon is thrust through the tube it may enter the flame of the spirit lamp. Some difficulty may be experienced in getting the ribbon to properly illuminate the screen, but a few experiments will render the matter easy. The writer has made considerable use of the above simple apparatus, and very satisfactorily; but as it necessitates two manipulators—one to attend to the light while focussing and arranging the correct position of the light, and another to superintend the screen and focus—he much prefers, for all purposes, a good paraffine lamp.

A well-made lamp is necessary, but good paraffine still more so. Avoid all low-priced, strong-smelling oils. Paraffine sold at 8d. per gallon is not only unfit for photo-micrography, but absolutely dangerous. When burnt in any lamp with a large wick it begins to evaporate rapidly as soon as the lamp gets warm, and after a while the flame will rush up the chimney, blackening it, perhaps cracking it, and frightening the operator, if doing nothing worse. Reliable paraffine may be had at 1s. 6d. per gallon, and this will give more satisfaction in every way. Duplex lamps may be used, but they present no advantages for photo-micrography. They give out much heat, consume a large quantity of oil, and the double wick is troublesome when using high powers. A single wick is far preferable, but it should be the broadest possible to obtain.

The lamp devised by Mr. Dallinger specially for working with high powers, is, perhaps, the very best yet made; but photographs can be taken with any paraffine lamp. For some time the writer used a tiny microscope lamp, and took some very successful photographs with lenses varying from 2 inches to $\frac{1}{8}$ th inch, but the exposure was necessarily long with all of them. The object of the photo-micrographer

should be to make his exposures as short as possible, and this can only be done by using a powerful lamp and a vigorous developer.

The light from a broad-wick paraffine lamp will be found sufficient for even high powers, but the brilliancy of the light may be much increased by putting a lump of camphor in the bowl of the lamp. Gaslight and candle-light are far too unsteady to be used for photo-micrography.

A Seaside Gallery.

ALMAN'S new photograph gallery and studio at Newport will probably become a famous rendezvous and one of the interesting points of the city. Situated in Bellevue Avenue, on the grounds of the Ocean Hotel, flanked by the Casino on one side, the skating rink in the rear, and being diagonally opposite James Gordon Bennett's main entrance, it at once occupies a very prominent and fashionable location. The gallery was erected for the purpose by the owners of the hotel, under Mr. Alman's personal supervision, only they build'd better than he could and even surpassed his expectations. It stands back about one hundred feet from the road in the midst of velvety lawns, is two stories high, of wood, painted in dark, neutral tints, which contrast tastefully with the bright, green carpet beneath. The reception room on the ground floor, a beautiful apartment, thirty feet square, is artistic and rich in its furnishing, the walls being decorated with Alman's life-size works in crayon, oil and pastel. They give evidence of his skill in the pursuit of his profession, to which he seems wedded, and to which he brings an enthusiasm which is as natural as it is rare and refreshing. The skylight is admirably planned; there is a perfect "dark room;" camera and chemicals are of modern type; indeed Alman here has facilities for posing subjects, manipulating plates and printing pictures such as we have not seen surpassed anywhere. We advise residents of Newport and transient visitors to give Alman a call, if only to see a photograph gallery which is perfectly appointed—a very gem in its way.—*The Home Journal*.

Mr. Melander and the Amateurs.

MR. MELANDER'S position in regard to the amateur photographers has been the occasion of much comment, no little discussion, and some misunderstanding. From what has been published many persons have gained the idea that he is utterly opposed to amateur photographers as a class. A more mistaken notion could hardly be conceived. Yet it is easy to perceive how this erroneous notion may have gained ground, fostered by those who had an interest in making the accusation as strong as possible or who honestly misunderstood his published statements. In order to understand why a professional photographer should have any hostility to amateurs, one must know that the condition of so-called amateur photography at the West is very different from that which prevails in the eastern states.

Here the professional can have no objection to the increasing numbers of the amateurs. They are a source of revenue to him, bringing in no small amount of work, and, by their increasing knowledge, creating a taste and demand for the best of work. Amateurs in the true sense of the word take up the art from a pure love of it, and practice without a consideration of reward. Such amateurs Mr. Melander, like all other wise and liberal minded men, welcomes with his whole heart as valuable workers in the great photographic field. Unfortunately in the West, and especially in Chicago, there appears to be an army of so-called amateurs who from curiosity, love, the desire of gain or some other motive have taken up the art, and who as soon as they can make a negative at once begin to canvass for *business*, proposing to make their newly acquired art a means for increasing their income. Everyone understands who knows anything of the universal rules governing the standing of amateurs in any branch of the arts, sciences, or of sports, knows that the moment one receives money for a performance, product, work of art or it matters not what, that moment he ceases to be an amateur and becomes a professional.

Surprising as it may seem the number of these renegade amateurs among Mr Melander's clients has become very large. Boys, with ten dollar outfits, are proposing to do portrait work, and, what is more to the point actually take the orders and execute them at prices which pay little more than the cost of the plates and the ready sensitized paper on which they are printed, to say nothing of the cost of the mounts. Then with a "cheek" that is phenomenal, they have in more than one instance asked Mr. Melander to burnish their work. Sometimes assigning as a reason that the work is for one of his customers. Of course this class of work disgusts the customer, and he is likely to come and order another dozen or two from the gallery, but here is where the worst of the trouble begins to be felt. He says: "I know what these things cost. You ask too much. Paper is worth so much, gold is so much, and a grain will tone a sheet, I cannot afford to pay you the old prices. I have a young friend in the business, and I know all about it."

Under such circumstances it is difficult to argue with a man, and, while it is sufficient to say these are our prices from which we cannot vary, the patron is dissatisfied and will probably take the first opportunity to go elsewhere for work. With such cases occurring from week to week, it is not difficult to see why, not only Mr. Melander, but many other photographers in the West have no love to lose for the so-called amateur who begins *business* as soon as he is able to make a development and print a picture.

Every one understands that the demoralization of prices in the West has been very severe, and that such things as these just mentioned have a more serious effect than they would under other conditions or in other localities. It is well in cases of this kind to refrain from forming an opinion in regard to the merits of the different sides until both can be heard and all the facts in the case are brought to light. While having the strongest good wishes for the advancement of amateur photography and the increase of the number of amateurs,

nothing is to be more deprecated than the increase of the semi-professionals, who are the bane of both branches of the profession.

Mercurial Intensification.

AMONG the numerous experiments made by the late Mr. Frederick Scott Archer, after his introduction of the collodion process, were those which led to his discovery of the bleaching agency of bichloride of mercury followed by the blackening of the image (thus whitened) by means of a solution of hyposulphite of soda.

In the course of time other agents than the hyposulphite were found to have the effect of darkening the chlorized image, and some one or other of these have secured the special favor of those who have had recourse to their aid in intensifying an image which was considered too feeble to produce a brilliant print. Among such agents we may mention iodide of potassium, cyanide of potassium (both alone and saturated with silver), sulphide of ammonium, and simple ammonia.

Each of the reagents named, and others besides, possesses its own special characteristics. For example: in the intensification of a negative of printed matter in which pure whites and intense blacks were required, the after-treatment of the whitened image, either by diluted sulphide of ammonium or solution of cyanide of potassium saturated with silver, followed as a matter of course, both giving extreme intensity, although the former imparts a deep brown color by contrast with the purer black of the latter. Either of these, however, is apt to produce contrasts too strong to be pleasant in portraiture or landscape work. Diluted ammonia has, for photography of this class, assumed a position of high popularity, and is now employed to a greater extent than any other of the various agents by which the chlorized image is affected. It is not our intention to refer here to the characteristics of these agents, or to classify the differences in the images that result from being subjected to their

action, but rather to point out another which may with great advantage be added to their number.

In our *Notes and Queries*, in another page, one of our correspondents directs attention to the fact that a solution of sulphite of soda possesses advantages as an agent for employment in connection with bleaching by means of bichloride of mercury. The strength recommended is a saturated solution diluted to the extent of one-half. We have tried this method of intensification, and like it much. The tone is different from that obtained by either hyposulphite of soda or ammonia, and is of a pleasing character. For chemical reasons into which we do not pause here to enter, there is no discoloration of the image even if it were suddenly transferred from the bichloride bath to the sulphite solution, the products of the decomposition being soluble in water.

Our trials of this intensifier have embraced both gelatine negatives and collodion transparencies, and we have nothing but high commendation of the system to make, so far as we have tried it.—*British Journal of Photography*.

The Velvet Roller and Collotype for Amateurs.

BY SAMUEL C. RILEY.

IN using the velvet roller no particular precautions are needed, but the roller should carry enough ink of moderate thickness, consisting of pure olive oil and litho. transfer ink thoroughly incorporated. The greatest advantages accrue from first rolling the collotype plate with the velvet roller, covering the whole plate with a thin uniform coating, and immediately rolling the plate with a leather roller sparingly covered with the same ink as used on the velvet roller. Any amount of brilliancy can thus be obtained (providing the negative is perfect), always remembering that a sharp rolling clears the whites effectively. I have repeatedly seen collotype plates that could not be inked up with the leather roller by

itself (owing to the plates being dried badly), which gave perfect impressions after having been inked lightly all over with the velvet roller, the plate being cleaned with a few gentle rolls with the leather roller.

To make a collotype plate that will give perfect impressions, proceed as follows:

First, the substratum for the plate. Take 1 ounce of ordinary dinner ale, 6 or 8 drops of silicate of soda, and well shake into a froth in a bottle, stand it by for twenty minutes, then filter. Take a clean glass plate (patent plate is best), and with a camel's-hair brush go over one side of the plate; set on end to dry. When dry, go over the plate again, letting it dry this time the other way up. When again dry, let a gentle stream run on it for thirty seconds; then again dry on end. When again dry, you may coat with the following solution: 44 grains Nelson's ordinary gelatine soaked for quarter of an hour in cold water, then heated in the oven till all is melted. Then pour into it the following hot solution—

Water, $\frac{1}{2}$ ounce.
Bichromate of ammonium, 6 grains.

Well mix and filter. On no account let the solution get to boiling point. Take an 8 x 5 plate with the dried substratum on it, and flow over it half an ounce of the hot gelatine solution; place at once on the levelled glass in the drying box. It should dry in two hours, and is ready for instant use. Expose under an ordinary negative for an hour, then wash in cold water for $1\frac{1}{2}$ hours, and dry in the open air, which takes from 4 to 6 hours, according to the weather. When dry, damp with very weak glycerine and water, allow the moisture to slightly evaporate, roll as above mentioned, and take impression off at once.

The drying box is as under: 20 inches high, 12 inches square, the levelling glass about 6 inches from the top of the box, three sheets of loose blotting-paper lying on it for the plate to rest on, a piece of iron (say) 6 by 4 by 3 heated in the fire, and placed 6 inches under the levelling glass. There should be at least three or four holes at the bottom sides of the box, and three at

the top, to promote a good draught. The heat in the box should be about 120° F.—*London Photo. News.*

Studies About the Action of Eosine upon Photographic Films.*

DURING my experiments with different coloring materials I have not confined myself solely to the wet collodion process, but I have made many experiments also with dry collodion and gelatine plates. This led to the discovery that many coloring materials will act splendidly upon dry collodion, that will give very unsatisfactory results in the wet process; and again—but only a few—show the reversed condition, and this becomes still more complicated when gelatine plates are used. About the action of colors upon gelatine plates very little has comparatively been published.

Clayton and Tailfer obtained a patent upon eosine gelatine plates in France and Austria, and in the description of the patent it is said that eosine dissolves in ammonia, which they consider very important, and add of this 1 part to 100 parts of emulsion.

They recommend also to immerse gelatine dry plates in a solution of eosine and ammonia. Schumann likewise worked with eosine. He obtained good results without the ammonia, but the green-yellow sensitiveness of his plates was a little less than the indigo sensitiveness. Some later publications do not contain more than has been said here. Remarkable only is the notice by Eder, that plates immersed in eosine, exposed wet, will act differently from those exposed dry, an observation which I have also made before, but which was never published.

About the height of the yellow sensitiveness effected by eosine, data seem to differ. During my first experiments I observed that the action of eosine depends to a great degree upon the nature of the emulsion. With two emulsions, one from Berlin and one from San Francisco, I obtained with

* Translated from *Photo. Mittheilungen* by H. D.

eosine as good as no results; after a prolonged exposure only a band of action showed itself in the solar spectrum in the middle between D and E. Even an addition of ammonia was of no use.

But a home-made pure bromide emulsion of moderate sensitiveness showed with two per cent. eosine solution 1 : 400, and one per cent. ammonia added, a very good yellow-sensitiveness. This amounted, exposed wet, to only half of the sensitiveness to blue. When dried, the sensitiveness to yellow was reduced materially, so that it appeared five times less than in a wet condition.

Sachs and Monckhoven plates furnished better results with immersion in water containing a two per cent. eosine solution, (1 : 400) and one per cent. ammonia, whose yellow-sensitiveness was about one-half of the blue sensitiveness. *This shows that the action of the coloring matter depends essentially upon the character of the emulsion.* If, therefore, Clayton and Tailfer furnish emulsions that are twice as sensitive to yellow as to blue, it is just as much due to the character of the emulsion as to the coloring matter, which I have extracted and experimented upon, to show its difference from eosine.

A small addition of iodine made the emulsion a little more blue-green sensitive, but the action of the eosine upon yellow was in no way altered.

It may be remarked, also, that the immersion of the gelatine plates in color solutions will never furnish such even results, as by addition of the color to the emulsion oftentimes fog will appear, and some parts will not take up the solution. Many plates came out of the bath entirely unaffected.

To a great degree the action of eosine upon collodion emulsions is better. Eight drops of eosine solution as above to 10 c. c. m. of emulsion gave a green-yellow sensitiveness that was somewhat higher than the blue sensitiveness.

But the wet process is superior to all. Eosine collodion sensitized in a bath free from iodide of silver (1 : 8) gives a green-yellow sensitiveness that is ten times higher

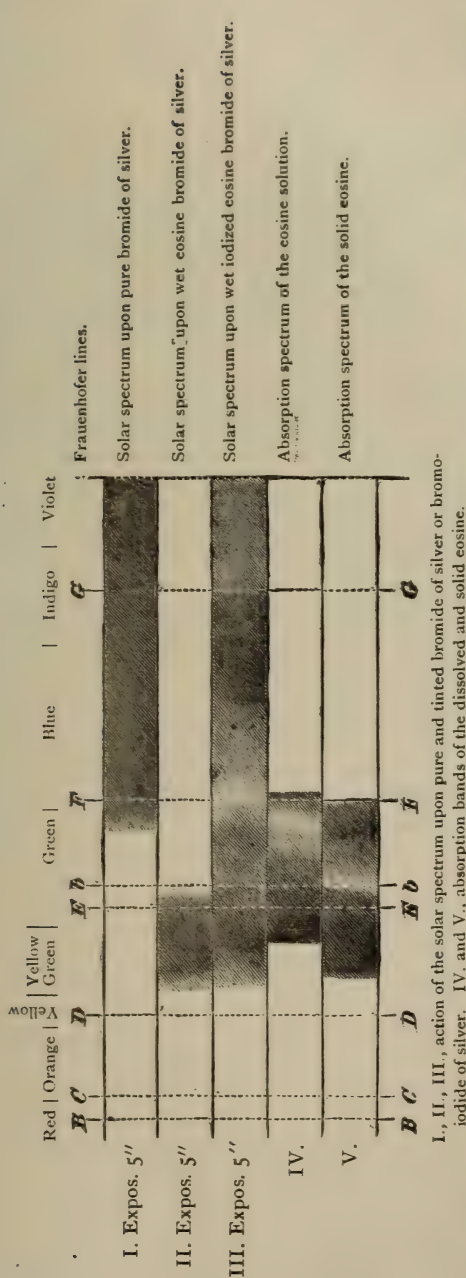
in the spectrum than the sensitiveness for blue, *i. e.*, with the solar spectrum an intensity in blue can be obtained in ten seconds, which about equals that of the green-yellow in one second. In consequence the reduction of sensitiveness to blue becomes convenient, caused by eosine, which has the effect that in short exposures (5'') a blue action cannot be observed.

That this condition is less favorable with a preparation in an iodized bath, is due to the strongly blue-sensitive iodide of silver entering here. Still the proportion of the yellow to the blue-sensitiveness is thus as 1 : 5 to 1 : 4.

Now where does this extremely favorable action of eosine upon wet collodion plates originate? No other coloring matter shows this so brilliantly. The majority of them act even worse in the wet process than in the dry.

The reason is the following: If eosine solution is mixed with silver solution, a red sediment of eosine silver will result, which dissolves easily in ammonia. This eosine silver has a remarkable sensitiveness to light. If, for instance, plain collodion is colored with eosine and silvered in the bath, eosine silver will form in the film. If this is exposed to the spectrum, it will be recognized *that the eosine silver will now give a developable picture of itself.*

I mixed plain collodion with a five per cent. eosine solution (1 : 400), immersed for five minutes in a silver bath and exposed to the spectrum for 5, 10, 15, 20, 40, 80, and 160 seconds, and treated with the common iron developer. It showed a very significant action of green and blue-green, particularly in the part of the main absorption band of the eosine. This action commenced after a lapse of 20 seconds, while with the bromide of silver eosine it showed in one second. This proves that eosine silver is twenty times less sensitive to yellow-green rays than eosine bromide of silver under nitrate of silver. Diluted glacial acetic acid will not dissolve the eosine silver, but diluted nitric acid will do so. The supposition is therefore correct that eosine silver will form, besides the bromide of silver,



The spectrum of the bromo-iodide of silver shows generally a very intense effect from ultra violet to indigo, falling off suddenly at line G, and continuing very faintly to b. The plates we have before us, containing only very little iodide of silver, do not show such a sudden falling off; they show at the height of their action to wave length 450, similar to bromo-gelatine plates.

during the silvering of collodion containing eosine, and that this shows a favorable effect upon the bromide of silver sensitiveness. It is a well known fact in photography that two sensitive bodies have a jointly favorable influence upon each other.

Iodide of silver in the wet process shows by itself very little sensitiveness to shadows. Bromide of silver shows sensitiveness to shadows only after a very long exposure. But bromide of silver and iodide of silver mixed show a sensitiveness to shadows surpassing that of the pure bromide of silver surely tenfold. The same condition relates to the spectrum. Iodide of silver in short exposures is sensitive to G only, that is for dark blue, bromide of silver to F (light blue), both mixed to blue-green (line b, F.) It is therefore the formation of a light-sensitive silver combination, *furnishing by itself alone developable pictures, and is at the same time an optical and chemical sensitizer*, causing the superior action of eosine in the wet process.

Upon dry plates this silver combination will not take place; the eosine forms here only an optical sensitizer, and its action is therefore materially less.

The cyanosine, also, which I mentioned in the last number and which surpasses the eosine, gives with silver solution a precipitate, and is therefore analogous to the eosine. If coloring materials are tried that do *not* furnish such a silver combination, *f. i.*, fuchsin or magdala red, it will be observed that they make the wet collodion plates sensitive to the absorbed rays, but that a much longer time of exposure is required, and that their action upon a wet collodio-bromide of silver plate does not surpass the action upon dry plates.

I may therefore draw the following conclusion, that in the wet process only such coloring matter should be used with success *which like eosine furnishes with silver salts a light-sensitive silver combination that may act at the same time as a chemical and as an optical sensitizer.*

The next thing now was to apply this eosine silver combination also to the dry process. Four *c. c. m.* of eosine solution,

1 : 400, were mixed with two drops of silver solution, 1 : 10, and the resulting precipitate dissolved in two drops of ammonia and mixed with the above-mentioned gelatine emulsion, upon which pure eosine acted very slightly.

The result was that by adding four drops of the eosine silver solution to 10 *c. c. m.* of the emulsion, a remarkable increase of the yellow-sensitiveness took place, appearing almost ten times more yellow sensitive, than by the addition of pure eosine with ammonia. A consequence of this addition was, of course, some slight fog.

Finally, it may here be mentioned that the action of eosine based upon photographic plates is not exactly in the same line with the absorption band of the alcoholic solution of the coloring matter, but inclines more towards yellow (it is actually in the middle between E and D sun). This fact is not surprising to the spectral scientist; he knows that absorption bands, by the influence of strong refracting means (collodion or gelatine), suffer a displacement towards red, and that, further, the absorption of the solid coloring matter changes from that of its solution. Eosine has, besides the strong absorption band in green yellow, still a paler one in blue-green.

With regard to the quantitative proportion I would remark, that I varied the eosine solution addition to gelatine emulsions from one and a half per cent. to five per cent.

The difference between the strong and sometimes very weakly colored ones was, that in regard to the yellow action it was not too great, but that by means of this increased coloring matter the total sensitiveness of the plate was reduced.

A Handsome Display.

OUR enterprising artist, C. P. McDaniel, has prepared a very handsome case of photographs for exhibition at the Grange Picnic and Fair. The assortment comprises several styles and sizes of his work, all of much excellence, and the display will be a fine advertisement for him.—*Cambridgeboro, (Pa.) News.*

Retouching Gelatine Negatives.

MANY photographers varnish their dry plate negatives, and then retouch them just as they were in the habit of retouching their collodion negatives, while others retouch directly upon the gelatine film; but it not unfrequently happens that the film is not in a condition to readily take the pencil markings, and in such a case the following mixture is useful:

Ordinary oil of turpentine,	100 parts.
Common resin,	2 "
Venice turpentine, . . .	4 "

A little is applied to the film with the tip of the finger, and rubbed until dry.

Some years ago, Carroll recommended the use of a solution made by dissolving twelve grains of tannin, ten grains of gum, and one grain of salicylic acid in one ounce of water; this solution being distributed over the surface of the plate by means of a glass rod, and the excess drained off, after which the plate is allowed to dry.

An aqueous solution used in an analogous way is recommended by Re, of Jeletz, the fixed and washed plate being allowed to remain for a quarter of an hour in a solution of acetate of aluminium, after which it is allowed to drain and dry; and this mode of treatment can be repeated if the surface is not rendered sufficiently matt by the first operation. Negatives which have been properly treated with acetate of aluminium are as easy to retouch as gummed collodion negatives.

The acetate of aluminium solution for the above use can be readily prepared by dissolving one part alum in ten parts of hot water, and adding sufficient ammonia to throw down all the alumina—or sufficient ammonia to make the mixture smell of this reagent after a thorough stirring. The gelatinous precipitate of alumina is now collected on a cloth and well washed, after which it is dissolved in a mixture of two parts of glacial acetic acid and one part of water. The acetic acid must be thoroughly saturated with alumina, and one can only be sure of this after it has remained for two or

three days in contact with a portion of the precipitate. The solution of acetate of alumina should be filtered before use, and it must be kept in a well-stoppered bottle. *London Photo. News.*

John Frederic Apgar.

BORN at Hartford, Conn., April 20, 1852. Died at Echo Camp, Raquette Lake, Adirondacks, August 28, 1884, of typhoid fever.

For over two weeks before he left New York for the woods he had been suffering from a mild form of fever, but was permitted by his physician to attend to his work and finally make the severe trip to the mountains, without being advised of his real state and danger; and when he arrived there he was in an exhausted condition from which he never rallied sufficiently to leave his bed, dying in just a week after.

For several years he has spent his summer vacations in the Adirondacks, and the last four on Raquette Lake, where, notwithstanding the fishing and hunting, one of his greatest pleasures was photographing its peerless scenes.

He had looked forward to this year's vacation with longings, and sent up many dozens of plates intending to make a most complete lot of views.

He gave photography a great deal of time and intelligent study, probably denying himself needed out door exercise to experiment in his laboratory and dark room.

He commenced it when a boy with the old wet process, watching carefully each new discovery, and often improving on it.

He had mechanical genius that was of great advantage to him, by enabling him to carry out his own views in making cameras, shutters, plate holders, etc. One of the best instantaneous shutters in use is made from his design.

He discovered a developer by the aid of which he was able to produce some wonderful results in instantaneous exposures, before plates were up to their present standard.

As a rifle shot few could equal him, and

he succeeded in arranging his camera so that he secured photographs of himself breaking bottles with a rifle ball as they were thrown through the air, the fragmentary glass being distinctly seen against the sky.

He was one of the founders of the Amateur Society of Photographers of New York, and his membership ticket is No. 1.

Few amateurs or professionals could as quickly comprehend the mysteries of the dark room, and his knowledge of chemistry gave him an advantage that often saved a negative that in ordinary hands would go under the sink.

He enlarged many views that he had taken by artificial light with such nicety as to only add to their beauty instead of bringing out defects, for all his work was done with the best of lenses.

His friends were wherever he was known, and no novice in the art ever failed to obtain any information he asked of him that it was in his power to give.

During the past spring and early summer he would go up the Hudson in his canoe before business hours, stopping here and there to expose a plate, and it is more than likely that on those trips he contracted the disease which ended in his death.

His earlier years were spent with the Phoenix Insurance Co. of Hartford, leaving there in 1873 to accept a place in the Merchants' Exchange National Bank of New York, with which institution he was still connected at the time of his death, and where his loss is severely felt.

Death of Mr. Jabez Hughes.

ANOTHER of those names which have become so familiar to every photographer is now added to the long list of those who have gone, Jabez Hughes having died on Monday, the 11th ultimo, at three o'clock in the morning. Mr. Hughes had been seriously ailing since the beginning of the year, and about a month ago he went to Harrogate for the benefit of his health, but he returned home a fortnight since, being so weak that he had to be carried from the

train. After this he kept his bed until the time of his death.

The immediate cause of his death was weak action of the heart, but both bronchitis and dropsy had served to bring him down. Mr. Hughes was between sixty and seventy years of age, and he commenced his photographic career about forty years ago, when he assisted Mr. J. E. Mayall at his studio in the Strand, near Lowther Arcade. Subsequently to this he established himself as a photographer in Glasgow, and afterwards he returned to London, and established himself in the Strand.

In 1859 he removed to Oxford Street, and three years afterwards he took Lacey's Studio in Ryde, Isle of Wight, and Mr. Werge succeeded to the London business. At Ryde he soon rebuilt the old premises, and the fact of the Queen very frequently commissioning him to do photographic work for her served to make his establishment much frequented. During the last few years almost the whole of the work turned out from the Ryde Studio was in carbon, a circumstance which adds much to the value of the work done.

Mr. Hughes was a very regular attendant at the meetings of the Photographic Societies, and he identified himself very actively with the work of the Photographic Society of Great Britain, he being a member of the council. He took the chair at the first meeting of the Photographic Club; and he also presided at the last meeting which was held in the old quarters at Ashley's Hotel.

During the past quarter of a century Mr. Hughes kept up a constant succession of papers, which he communicated to the *Photographic News* and to the societies; and it is interesting to note that in a paper which appeared in our volume for 1860 he referred in decided terms to the possible advantages to be realized by using chloride of silver in conjunction with iodide when a latent image is to be developed.

The funeral took place on Aug. 14th, at Abney Park Cemetery near London, many faces well known in the Photographic world being recognizable amongst those present.

Portrait Work for the Amateur.

EVERY amateur has an ambition at some time in his photographic career to take portraits, but is usually discouraged in doing so by the difficulties which he encounters and the want of instruction in the methods by which they may be overcome.

Few things are needed in addition to his regular outfit. In these days of rapid plates even the ordinary single landscape lens can be used to take a portrait without a very prolonged sitting. The first necessity is a good sized window facing the sky. It should look toward the west, north or east. If it has a southern exposure the bright sunlight will prove an obstacle, but even this may be overcome by the use of a tissue paper curtain. The window should be so located that eight or ten feet is available on one side of it, and if possible a foot or two on the other side. The larger the window the better; but if it is of ordinary height and has a good illumination, very pretty pictures can be taken with only such accessories as a black shawl for a background and a sheet for a reflector. The first thing to be done is to procure the most rapid plates available, say Eastman's Special. The Tropical will answer in hot weather, and give perhaps a little less trouble in working; but unless the light is very brilliant, require a little longer exposure as compared with the Special.

The plates being provided, the next thing is to hang up a sheet four or five feet distant from the window, and between the latter and the sheet the sitter is to be placed at a distance of two or two and a half feet from the window and nearly opposite the casing farthest from the camera. If the wall has a dark paper a background can be dispensed with. With the most brilliant lighting without using the sheet the shaded side of the face will be found to be much darker than that illuminated by the full light of the window, and the portrait when printed will give one side of the face perfectly white, and the other full of shadow and detail, yet altogether too black. To avoid this the amateur must have re-

course to a device which, we believe, is original with Mr. Ryder of Cleveland. It consists of a round or square frame or hoop about fifteen inches in diameter, covered with white tissue paper. It should be mounted on the end of a stick four or five feet long. In the centre of the tissue paper a round hole about four inches in diameter is cut. The use of this frame is to shade the side of the face toward the light and at the same time to allow a small beam to strike upon the features, so as to give brilliancy to the high lights. When the amateur is ready to make the exposure he takes the frame by the handle and holds it so as to cast a slight shadow upon the face. At the same time the hole in the tissue paper will allow a beam of light to fall upon the face and illuminate the features. This will equalize the shadows on the two sides of the face and prevent hard and distressing contrasts. Of course the screen must be kept far enough away from the sitter to prevent its coming into the picture. A slight movement of it during the exposure may be desirable to soften the shadows still further. As the artist holds the screen with one hand he uncaps his lens with the other. In this way results may be obtained without a skylight and with only a very limited side light which will be exceedingly satisfactory, and will do the amateur credit.

The perforated screen is a dodge which professionals would do well to adopt generally. By its use the artist can produce upon gelatine plates under a skylight intended for wet plate work negatives having all the brilliancy of the best collodion work.

Mr. Ryder's light in many respects is not what he would desire to have it, and as he has had to contend with many difficulties he has been obliged to adopt expedients which have not been considered necessary elsewhere. Still he produces work which for softness of tone in the shadows and brilliancy in the high lights would satisfy the most fastidious, and in doing this the perforated screen with its small beam of light is indispensable.

If the amateur wishes to photograph friends in light dresses he cannot do better than use a black shawl for a background. This will by no means give him a black ground in his finished print, but the ground will be so dark and the shadows so faint that he will get a much better effect than he could produce in any other way.

The beginner will hardly obtain too much illumination on the side away from the window when he first commences, and it will be better to err on this side than in the opposite direction, and have too much shadow. His reflectors may be extemporized by means of a clothes horse and a sheet, and until he attempts full-length figures he will find these all that he needs.

For this kind of portrait work we should recommend a pure potash developer with sulphite of soda, to prevent too deep staining of the negatives. In warm weather a solution of chrome alum with a little oxalic acid in it, say half a teaspoonful of acid to eight ounces of water, will be found useful. This may be poured over the plate, or the plate immersed in it, as soon as it comes out of the developer and before putting it under the tap. When the water is very warm and the development has had to be somewhat prolonged, it is dangerous to allow the water to touch the plate before it has gone into the hardening solution, and for this reason we prefer to dip the plate at once into the alum clearing bath just as it comes from the developer.

The question of exposure is one which the amateur will have to answer for himself, the simple landscape lens on a 5 x 8 plate requiring from ten or twenty seconds to more than a minute. With such an instrument an easy chair high enough to support the head is almost indispensable; without it a head rest is very much needed. One of the cheaper forms of rest, merely a point against which the sitter may lean the head for support, is a luxury that no one who undertakes portraiture will regret having. Such a rest enables the pose to be carefully considered without fatiguing the sitter, we had almost said patient. In general the first subject must be selected with

regard to the quality of being patient, or bad pictures and bad feelings may be developed with a rapidity certainly astonishing.

Stripping Gelatine Negatives or Positives by the Aid of Hydrofluoric Acid.

OUR readers will remember that in 1882 we published a method of stripping the film from gelatine negatives by the action of hydrofluoric acid, and we have commented several times on the ease and convenience with which the separation of the film from the glass can be effected, but M. Bory has recently published* a suggestion to use hydrofluoric acid for a similar purpose, apparently without knowing anything about Mr. Plener's prior publication. As, however, M. Bory appears not to have worked out the practical detail of the method so thoroughly as was the case with Mr. Plener, we will now point out the main features of the process as given on page 225 of our volume for 1882.

Mr. Plener's method of stripping is best carried out by building up a wall of cardboard strips round the negative, and, after levelling, pouring on a warm solution of gelatine. When the film is dry, or nearly so, it is immersed in the dilute acid until it can be easily stripped off, after which it is rinsed thoroughly and allowed to dry. If the wet film be carefully squeezed down on a sheet of waxed glass, it can be easily separated as soon as dry, and under these circumstances the film negative is of course obtained with a beautifully even surface. Another method, which may be occasionally useful, is to immerse the stripped and still wet film into a bath of methylated spirit, a proceeding which causes the swelled film to rapidly shrink to near about its original size; after which drying between sheets of blotting-paper serves to remove almost every trace of spirit, so that the negative may be ready for printing from in a very short time.

* Bulletin de la Société Française de Photographie, xxx., p. 183.

When a positive on paper is wished for, it is very convenient to make the picture on a plate, in the first instance, and then to transfer it to paper. In such a case the positive picture on glass may first be coated with a thin layer of gelatine, to which a sheet of smooth-faced paper is next attached, or the paper itself may be brought into contact with the film under a warm gelatinous solution, as when prints are mounted in optical contact with glass, the remaining operations being so similar to those already mentioned as to require no special description. Mr. Plener has shown us many pictures which had been transferred to paper in this way; and those negatives which had been transferred to a fine or close-grained paper had evidently lost none of their printing qualities, excepting so far as the paper backing would, unless waxed, considerably retard the process of printing.

Mr. Plener also pointed out that hydrofluoric acid is an extremely valuable agent for cleaning glass plates (*Photographic News*, 1882, p. 232), and so many have adopted and described this method of cleaning plates to which foreign matter adheres with exceptional tenacity — that we are rather surprised to find that M. Bory recommends it for the purpose without any reference to its previous use in this connection.

M. Bory uses one part of strong hydrofluoric acid to about two hundred and fifty of water for stripping the film, and one part with fifty or a hundred of water for cleaning glass; but we have used it with advantage of this latter strength for separating the gelatine pellicle from glass.

M. Bory says nothing about the use of alcohol for causing the expanded film to contract to its original dimensions, and it may be mentioned that, as in most cases the stripped negative is required to be of the same size as the original, it is of very great importance to be able to bring back the exposed negative to its original size.

Mr. Plener also suggested the use of moderately diluted sulphuric acid for the purpose; but it is hardly so convenient as alcohol, owing to the difficulty of removing

the last traces of acid except by long washing in alcohol; still, by the use of sulphuric acid, the stripped negative can be readily reduced to less than its original dimensions.—*London Photo. News*.

Concerning the Sensitiveness to Color of the Collodion Process, or the Correct Representation of Colors by means of Black Photography.

BY DR. H. W. VOGEL.*

Precautionary Measure.

In the last article I described the manipulation with color collodion and will add now by reason of later experiences the following:

1. To the silver bath No. 1 (sensitizing bath) are to be added two to three per cent. of *alcohol*, thus avoiding the half moon shaped stripes that appear, because color collodion has a stronger tendency to discharge or remove the silver from the bath than ordinary collodion.

2. If an exposure is made *without a yellow glass*, double the time of exposure for ordinary iodized collodion will be sufficient for color collodion.

3. For exposure through the light yellow glass, a duration of five times the exposure required for wet iodized collodion is necessary.

4. Eosine being alkaline and thus neutralizing the silver bath, and further, as disturbing organic substances might easily get into the bath in that way, *both* baths should be examined each time before use: A drop of permanganate of potassium 1 : 100 is added, and if the pink color disappears at once, another drop is added, and this is continued until the pink color remains for about one minute. After this it is tested with litmus paper and acidified, either with glacial acetic acid (bath 1) or nitric acid (bath 2). With regard to the second bath, there is yet to be remarked that it receives the same addition of iodide of potassium as the former.

* Translated from *Photographische Mittheilungen*. by H. D.

To some of my students who have worked the color process, it oftentimes happened that dense fog and peculiar grains with comet-like tails appeared, actually frightening them. With three drops of permanganate of potassium and a few drops of acid the fault was removed in a few minutes, and clean plates resulted therefrom.

The Restoration of the Silver Bath.

With the coloring matter organic substances will get into the silver baths which cannot be removed so easily as those generally found in photography, and to make them harmless a cold treatment with permanganate of potassium is not now sufficient. The bath must be boiled in an evaporating dish, and then a solution of permanganate of potassium 1:50 is added; first, one drop. As a rule this will give the bath at once a brown color. Then a second drop is added, and so on. Finally this will reach a point when a drop freshly added will give the bath a pinkish color. As soon as this color action lasts for half a minute, a further addition of permanganate of potassium is not needed, the bath is filtered and acidified with the aid of litmus paper, either with glacial acetic acid (bath 1) or nitric acid (bath 2.) The restoration of the baths with permanganate of potassium is the best of all. But many do not succeed because they add a great deal too much of the preparation.

Action of the Grain of the Pictures.

Quite a remarkable appearance is the very small influence which the otherwise so disturbing grain of the paper shows with the color collodion. Oftentimes I took the same picture with ordinary iodized collodion and then with color collodion. With the former the plates showed as intensely disturbing grains; with the latter, even under exactly the same conditions of lighting, not the trace of grain could be observed. This appearance myself and students have observed many times, so that a doubt about it cannot remain, thus forming at all events a great advantage of the new process. The

explanation of this appearance is, that the shadows of the paper grain are only lighted by the yellowish reflected light of the gallery; this acts upon ordinary plates like black and shows therefrom very intensely, but upon color collodion this reflected light acts like white, for which reason the shadows do not become dark, but light, and will disappear.

The Reproduction of the Color Table.

In an annexed color table, in comparison with the reproduction in *Vogel's Handbook of Photography*, the powerful action of the yellow and green tones, and the weak action of the blue tones is very conspicuous. But the action of crapps, mennige, ultramarine and chrome red shows in the silver print better than in the lichtdruck; said tones are much lighter in a silver print.

The light green tones act generally a little too strong.

By introduction of the cyanosine, whose absorption band is more towards the yellow, I hope to remove this evil. The grain-like appearance of the color fields is due to the unequal application of the colors. Retouching materials of any kind were not used. The red-sensitive coloring materials cannot be had in trade at present, to permit of their use in collodion.

Conclusion.

It is a well known fact that when an invention is published people will always say they had seen this or that before. This is the same with the color collodion process. It is possible that some may have a similar process, but nothing has been published yet, and it has been kept by these people as a secret. But according to an old rule the right of priority belongs to the one publishing the invention first. This may be considered also in regard to my process.

ANTHONY'S New Transparency Dry Plates are giving excellent results in the hands of those who use them. No failures. No complaints. Try them.

The Economic Production of Cold.

It is unnecessary here to dwell upon the advantages to photographers and others of being able to obtain a degree of cold in any fluid or solid substance rivalling that produced by the agency of ice. We are all aware that ice, whether produced naturally or artificially, is the frigorific agent with which photography must ever remain economically associated. So temperate, however, is our English climate that ice is here a luxury—not a necessity; and it is only in larger towns or cities, and not always in those, that it can be procured by purchase. The opportunities for its being obtained by those residing at a distance from such centres are, consequently, extremely limited, and this will continue so until the manufacturers of ice-making machines realize the fact that in the production of those of a small, low-priced class, suitable for domestic use, lies a great and lucrative future.

In the "machinery in motion," or western, gallery of the Health Exhibition there is a stall, presided over by a young lady, who invites the attention of the visitor to certain small machines for the almost immediate manufacture of ices. To this attendant we, in the course of conversation, started the difficulty of blocks of ice being an initiatory and continuous factor in the production of the ices. This was not a necessity, she said, as the firm which she represented supplied a freezing crystal or powder which, when placed in the machine and mixed with water, answered a similar purpose to ice in lowering the temperature.

The readers of *The British Journal of Photography* are well aware that by the solution of certain crystalline bodies a considerable degree of coldness is produced. Hyposulphite of soda, for example—which we cite as a salt with which photographers are familiar—when dissolved in water reduces the temperature to a very material extent. To give point to what we say we have in an ordinary four ounce graduate placed water a little below the temperature of the atmosphere, the thermometer at the time of

making the experiment registering 69° Fahr. On being immersed in the water the thermometer fell two degrees, denoting a water temperature of 67° Fahr. Upon throwing in a handful of crushed hyposulphite of soda the thermometer rapidly sunk to 44° Fahr. at which it remained for some time, indicating a reduction of the heat to the extent of 23° Fahr. as the result of this simple action. Having removed the thermometer and washed the bulb we immersed it in a second graduate containing water as before, and found that the degree of temperature indicated on the stem was 67° Fahr., as in the previous instance. This fact noted, we next took up a small handful of crushed nitrate of ammonia, the reputation of which as a cold-producing agent is well known, and scarcely was it in until its potency was recognized and shown by the thermometer, the mercury having made a rapid descent until it reached 27° Fahr., or five degrees below the freezing point of water, representing a reduction of the temperature of the water to the extent of forty degrees.

Here, therefore, is a gain of a tangible character. If it be inquired at what cost it has been obtained, we reply "at no cost whatever," the first expenditure incurred in obtaining the salt being relegated to one side at present; for, upon decanting the solution of the ammonium nitrate into a metallic tray and exposing it to heat—that from the sun sufficing—the water evaporates, leaving the crystals hard and dry, and in readiness to be again dissolved and produce cold as before; and this may be repeated times without number. Here, therefore, by an initiatory expenditure of a small sum, we have always at hand an enduring means by which we can invariably ensure the production of a degree of cold below the freezing point; and this without any cost of labor or appliances, if we except the means which we shall now describe, and which we have adopted on account of the ease and small cost of production, not being insensible to the fact that there may, although at present unknown to us, be other and better means for effecting the same end.

In a circular wooden vessel of any re-

quired dimensions is fixed a coil of tin gas-pipe of large diameter, made in form like the worm of a still. In bending this in a sharp turn it will be apt to "kink," but this may be prevented by previously filling the tube with sand, after which it is capable of receiving even the sharpest bend. The sand is, of course, emptied out when this operation is terminated. The lower end of this worm is attached to a tap which passes through a vessel near the bottom. The upper end is soldered to the bottom of a small tank formed of zinc which is fixed in the upper part of the wooden vessel, yet in such a manner as not to prevent the nitrate of ammonia and water from being easily thrown or poured into the vessel. The capacity of the tank may be such as to contain any quantity of liquid required to be cooled, from a quart to a gallon, or upwards.

Whatever the nature of the liquid be from which the heat is to be withdrawn it is poured into the tank from which it immediately descends into and fills the worm. A charge of the freezing powder is now thrown in by means of a suitable scoop, after which sufficient water is added to more than cover the powdered nitrate. After being allowed to stand for a very brief period the liquid may be drawn off by the tap, when it will be found to be in a state of icy coldness. When the refrigerating solution has served its purpose it is drawn off from the vessel into a flat metallic tray by means of a second tap quite close to the bottom of the vessel, and, as we have stated, when the water has evaporated from the solution the crystals are ready for either being used again immediately or for storage in a wide mouthed bottle for employment at some future period.

By adopting a non-conducting casing, on the principle of the Norwegian cooking-stove, any article or fluid which has been made cold in the manner described may be retained at or near the freezing point for several days; and, if precaution be taken to have it surrounded by a non-conducting body—such as felt, cloth, lime, or a mixture composed of them all—the vessel in which the

solution is made may consist advantageously of tin or thin zinc. It must, however, be encased in a wooden shell, the space between the two being packed with the non-conducting material described. A cover, rendered non-conductive by similar means, should also be procured; and to render the apparatus quite perfect the taps must be formed, not of metal, but of ebonite.

The logical reader will at once say—"If this apparatus prove such a perfect means for conserving cold or acting as a refrigerator, would it not answer equally well for a purpose directly the opposite, namely, for retaining heat in its interior?" Certainly it will; and by way of experiment we have warmed an emulsion to nearly the boiling point and locked the vessel containing it in the refrigerator. At the end of twenty-four hours it was found to be still hot.

We are aware of several additions that may be made to the ammonium nitrate by which its efficacy may be promoted; but as with such additions its power for being used "over and over again" becomes impaired, we recommend its employment pure and simple. If a greater degree of cold be desired than that we mentioned as the result of the first experiment, it is easily secured by employing, as the solvent of the salt, water much colder than the temperature of which we have already spoken as having tried.—*British Journal of Photography.*

Grain or Stipple in Photo-Mechanical Processes.

IN *Foreign Notes and News*, in our last issue, we gave a translation from the *Correspondenz* of a patent for securing a grain in a negative. The patent, however, is, as patents frequently are, very vaguely worded; but, so far as we can gather, the method is based upon utilizing the granularity of the silver forming the image for producing the printing grain. The process appears to be this: From a negative a transparency is made "as small as possible." This is then enlarged and a picture obtained, which "consists of a great number of

small dots." Then follows a formula for the collodion and developer to be used.

Now it is tolerably well known, in the collodion process, that the developer employed to bring out the picture has a marked influence on the size of the particles of silver which form the image. If we use pyrogallic acid we have them very fine indeed, and by using gallic acid we can get them finer still; indeed, it is quite possible to produce the particles so fine that the image partakes more of the character of a stain or dye than an actual deposit. But if iron be employed to develop the picture, then we get the image much coarser; and the more iron and the less restraining acid there are in the developer the coarser will be the particles.

On this fact is based the method of Herren Benecke and Fisher. They propose to produce from the negative a very small transparency, the image of which is composed of large particles of silver. Then when this image is again enlarged the particles will become very apparent, and so they claim to produce a grained or stippled negative suitable for producing prints with a grained surface. We have no details as to the degree of reduction necessary to obtain a useful grain, except that the transparency must be made as small as possible. From this, and what we know of the character of the particles composing an iron-developed image or collodion, we assume that microscopic proportions are meant. Now it appears to us that if the reduction be so very great—for it must be in order to get a decided grain in the enlarged negative—and the particles of silver composing the image are large, when the picture is amplified much of the fine detail of the photograph will necessarily be sacrificed, however sharply it may be focussed in the enlargement. The patentees mention only collodion, but it appears to us that a much better result might well be expected to accrue if the gelatine process be employed in preference—at least for making the small transparency.—*British Journal of Photography*.

TRY our New Transparency Plates.

The Annual Field Day of the Photographic Section of the American Institute.

PURSUANT to the following invitation the members and friends of the Photographic Section of the American Institute duly proceeded to Coney Island:

INVITATION.

New York, Aug. 16, 1884.

Dear Sir:

You are cordially invited to attend the ANNUAL FIELD DAY EXCURSION of the PHOTOGRAPHIC SECTION of the AMERICAN INSTITUTE at CONEY ISLAND August 28, 1884.

The Headquarters during the day will be at the Hotel Brighton, where dinner will be served at 5 o'clock P. M.

Should the day be stormy, the Excursion will take place on the following fair day.

Tickets may be had by applying to the Chairman of Executive Committee, J. B. Gardner, 147 Fulton Street, New York City.

N. B.—Please respond (to this) as early as possible, that the Committee may make definite arrangements respecting the dinner.

H. J. NEWTON.

President.

Punctually the members or guests, equipped with their several instruments, appeared at the foot of Whitehall Street, and after a delightful passage across the bay, proceeded on their way by rail to Brighton. Others took the opposition lines, and enjoyed glimpses of the narrows and breakers beyond on the outside passage, while the Brooklynites repaired to the festive scene by horse cars and rapid transit.

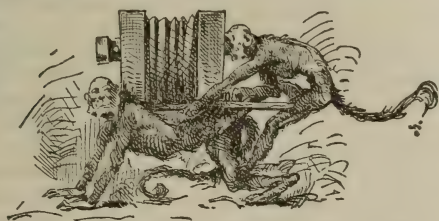
After viewing the Elephant and portraying his colossal proportions (the veritable beast with tusks and trunk), and seventy spacious rooms, erected to serve as a fitting resting-place for the weary and unwary traveller, and catching natatorial humanity in all its varied moods and movements on the shifting sands, the crowds, the breaking

waves, the beauties and the flowers, promptly at five the stragglers returned and assembled on the piazza at Hotel Brighton. There the company was photographed, the last group having being secured after the setting

sun had lent long shadows. Then the jovial gathering formed in line and followed its leader to the festive board, each being presented with a pasteboard passport, as follows:

— ANNUAL —
— FIELD * DAY * DINNER —
OF THE
PHOTOGRAPHIC SECTION

OF THE
American
Institute,



AT
Hotel Brighton,
Brighton Beach.

AUGUST 28TH, 1884. FIVE P. M.

ADMIT ONE.

The Gentlemen who sat down were—

Pres. H. J. Newton, Mr. Abraham Bogardus, Col. V. M. Wilcox, Messrs. G. G. Rockwood and J. B. Gardner, Dr. J. P. Garrish, Pres. of the Farmer's Club, Mr. Thos. D. Stetson, Pres. of Polytechnic Section of the Amer. Ins., Mr. F. C. Beach of the *Scientific American*. and President of the Society of Amateur Photos of New York; Mr. T. C. Roche, Mr. W. E. Partridge, Mr. Henry M. Parkhurst, Dr. R. W. Wilcox, Mr. O. G. Mason, Mr. Richard A. Anthony, Mr. Richard Nugent, Mr. R. H. Moran, Mr. Clarence R. Hatton, Mr. Percy A. McGeorge and others, whose names we cannot recall.

The courses—excellent, palatable, profuse—were most toothsome, and appropriated with great relish, and the element of fun was not wanting. Afterwards the merry company broke into post-prandial speech, happily led by the President in a few opening remarks on—

What is an Amateur?

The President, Mr. H. J. Newton, after a few congratulatory remarks to the friends and members of the American Institute present, said substantially as follows:

We have come together, professionals and amateurs, and it suggests the question what is an amateur? He knew the early requirements of an amateur photographer. It was necessary for a person to become familiar with the chemistry of photography. We consulted Hardwich and other similar authorities. It was necessary firstly to know how to make one's own collodion, and it frequently became necessary to make pyroxyline. At that time we could make a better article than we could buy. Furthermore it was important to know the effects of the different salts used in the preparation of collodion. It was also necessary to know how to compound the negative bath, and how to keep it in working order, for it often happened that the demon of the dark room invaded the bath, and instead of negatives we got fog and all manner of streaks and mark-

ings; and unfortunately that demon was always present when it was most inconvenient. Such, he thought, was the universal experience of amateur and professional alike, and how to eliminate him and "doctor" the sick bath was one of the first of the amateur's attainments. He also had to know how to make his developing solutions to secure the best results, and the nitrate of silver bath for sensitizing the paper for his prints. Then came the printing, toning, fixing and mounting.

All that is changed. Now an amateur sends to a dealer for some sensitized plates; he exposes them, and not unfrequently sends them to a professional to be developed, and orders a lot of prints to be made from the negative. And yet he ranks as an amateur photographer, and exhibits his pictures so obtained as marvels of his skillful production.

Looking with a prophetic eye forward I see an advertisement in the BULLETIN to the following effect: Exposed sensitive plates for sale. Plates exposed to order of the most attractive views in Central Park, or the Hudson River, Coney Island and elsewhere. The amateur may order as his fancy dictates. Looking still further forward I observe another advertisement, wherein it is offered to furnish them exposed plates developed to order. The amateur selects from a catalogue a lot to his taste, takes them to a professional and orders a batch of prints, which he proudly distributes among his numerous friends, and claims them as specimens of his handiwork.

It is a serious question what is an amateur photographer, and what are the limitations by which we are to be guided in giving an answer. The direction we are now pursuing justifies the conclusion that the picture I have drawn is more likely to become a reality than otherwise. The gentleman who is sitting at my left claims to be an amateur photographer, because he has made a blue print from a mechanical drawing. Perhaps that is as near the end as we can well go.

And the professional photographer has little more claim to the name of photographer, for any one can open a photographic gallery without any knowledge of photography as a science or an art. After leasing his premises and fitting them, he procures what is technically known as a dark room operator, a positionist, and others to print, tone and mount. If he is a good financier he becomes a successful professional photographer.

Contrasting, therefore, the present with the

requirements of fifteen or twenty years ago, it is obvious that the question I have raised is a difficult one to answer. [Applause.]

The PRESIDENT. I have the pleasure of introducing Mr. Abraham Bogardus, who will address you on the subject of—

Photographic Conventions.

MR. PRESIDENT AND GENTLEMEN:

I believe in conventions, large or small, if they can be made practical. The trouble with large gatherings is *too much talk*. One man with strong voice, good lungs, and the gift of continuance sees an alteration desirable in the constitution, makes a motion, and, of course, it is seconded. He talks until he is *TIRE*D.

Another wishes the convention to *know* that he, too, *is an orator*, and takes a different view of the subject to keep up the argument.

Now somebody offers an amendment to the resolution, and then it must be gone *all over* again, and all disposed to speak must have a chance. The chairman is powerless; he can do nothing but put the question when the *subject* and *speakers* are *both exhausted*. By this time the hours of the session have expired, and practical photography receives no attention, and fault is found with the officers. *Less talk and more work*, and you have done some good.

I think we need conventions of the *people*; that they may be taught to know a *good* picture from a *poor* one. An intelligent looking man comes in, and wishes a life-size picture of his deceased wife; shows perfect pictures by Kurtz, Rockwood or Bogardus, but these *are not good*. He has a tin-type made in the country that *is good*, when in reality there is *not a feature on it*—just a dim, blurred nothing.

An intelligent looking lady asks the price of "them fortetrags;" is told, and with a toss of her head she says she can get plenty for two dollars a dozen, *just as good as any*. [Applause.]

The PRESIDENT. I now have the pleasure of introducing Col. Wilcox, who has something to say on the subject of—

The Development of Photography.

MR. PRESIDENT AND GENTLEMEN:

In all nature two tendencies are at work at the same time, contradictory and yet complementary, the one tendency turning to the more

complex in composition, the other tending to the simplest possible expression.

As we look about us we see these processes going on; from the simplest elements arise complex bodies, which soon again relapse into their primitive elements.

No better example of this can be adduced than the study of an art whose entire history is so brief that it can be comprised in the lifetime of any of the older ones among us.

If I could show you our business shortly after the birth of the photographic art you would see that the requirements of it were few indeed, the apparatus crude and simple; the number of chemicals used were few in number, principally mercury, iodine and hypo.; the accessories almost none. Nor indeed were the necessities of the business large, for the public had yet to be educated to prize the likeness or to value at its true worth the discoveries of Daguerre. Limited as were the requirements, still more limited were the capabilities of the photographic processes as they existed at that date. Owing to the imperfect reflection of the image upon the plate, and the imperfect development, the results were often unsatisfactory.

Next came the great improvement of the collodion plate, although it met with bitter opposition from some who believed its introduction to be detrimental to their commercial interests. Last of all in our dry plates we have made some further advances. In each step we see progress from the simpler towards the complex; complex, not only in detail of working but in composition. Each step in advance was preceded by a knowledge, increasing in accuracy, of the factors entering into the processes, in order that a satisfactory result should follow. Thus in a simple development of the primitive silvered plate we had the earliest expression of a method of bringing out the latent image. Simple as was the process, failures abounded because the workings of the chemicals employed were not accurately known.

Now, as one looks over photographic literature he is bewildered by the multiplicity of developers and by their complexity. And indeed so common has photography become that even the daily press satirize this fact. If one may venture to predict, it seems as if, taking other arts in analogy, that we are ready to turn our attention to simplicity, because every chemical that we add brings with it new dangers of impurity and new dangers of setting up undesirable chemical reactions.

What is true of the development of the plate itself is also true of the development of the business, when our shelves must exhibit contributions from both organic as well as inorganic chemistry, when not only chemical compounds as nature gives them, but the choicest products of the laboratory are called into requisition that the art may progress. Nor indeed does chemistry alone, though filling an important part, suffice, but optics and general physics are laid under contribution. Perhaps there has been as much specialism in the lens as in almost any other factor that enters into a successful picture, as a result.

While the stock dealer has found the requirements of the trade ever extending, the profession itself has been undergoing a differentiation. Nor yet is this unlike what is taking place in life about us. Thus we see it in every branch of business and in every profession.

In the early days of our art the term Daguerreotype or photographer was certainly distinctive enough, but now one meets those devoting their attention solely to portraiture, or even branches of portraiture, to landscape, or to micro-photography, while in the other branches more or less dependant upon photography as photo-lithography, photo-engraving, we find those especially skilled attending almost entirely to their chosen branch. The rapid accumulation of facts, as to the behavior of light and certain chemicals, and deductions from these facts, the results of the study of an army of workers, has been so great, and the field covered has become so vast, that this differentiation has become an absolute necessity.

The future of photography is indeed brilliant in its possibilities. The direction towards which the greatest advances will turn is not difficult to imagine. In the earlier days the exact image to the most minute detail could not be produced. But when every point and line through perfection of apparatus and plates could not be reproduced, a step backwards from one point of view was made in the invention of the process of retouching, because the photograph was not in this case true to nature. Still, although color is in many respects subjective, we may hope that in the not far distant future, our photographs may be as true to color as at the present day they are exact in detail. When this goal is attained then may we consider that our art has well nigh reached perfection. [Applause.]

The PRESIDENT. We shall now have the pleasure of listening to Mr. Rockwood, who has chosen the ladies and babies as the subject of his remarks.

Ladies and Babies.

In response to the toast Mr. Rockwood said, in part:

Certainly this is a most prolific subject—a pair of subjects, either one of which affords a theme far too extensive for an after dinner speech, which of all things should be the model of brevity in order to be interesting. Yet it is a charming association of ideas—for with the first—the “ladies,” God bless them, how naturally in the course of events is the *hope* of “Babies.” Seriously, children are becoming a large element in photographic art, and for my part I speak in all candor when I say, I “welcome the guest.” I prefer to make pictures of children rather than adults, because I like them, and also for the reason that they are free from all artificialities and hence natural, and generally graceful; and although we do not always deal with cherubs and angels, they are so in the estimation of their mothers; and it is an old saw that the key to a mother's heart is the admiration of the child. However much I find my serenity disturbed by the sometimes unreasonable exactions of the adults, I rarely grow impatient with the little ones. Possibly the fact that two generations cluster around my hearth-stone and fill it with sunshine, gives me a grand-paternal interest in the babies.

Photography seems to be in some families one of the rites or ordinances of childhood. My little daughter was asked by a friend, “Molly, how is your baby brother?” “Oh, he is all right,” said she, “he has been baptised, vaccinated, and had his picture taken!”

Like good Ben Adhem, who desired the angel of light to write him as “one who loved his fellow man,” I would be written as one who loved babies and children. To me one of the most exquisite of poems is George MacDonald's—

The Baby.

Where did you come from, baby dear?
Out of the everywhere into here.

Where did you get your eyes so blue?
Out of the sky, as I came through.

Where did you get that little tear?
I found it waiting when I got here.

Whence that three-cornered smile of bliss?
Three angels gave me at once a kiss,

Where did you get that pearly ear?
God spoke, and it came forth to hear.

But how did you come to us, my dear?
God thought about you, and so I am here.

[Applause.]

Mr. GARDNER, next introduced, in replying to the toast, said (in a half serious, half humorous way) as follows:

Photography From A Social Point of View.

There are many occupations or professions so distinctly graded that it is decidedly difficult for any large number that may be found in their ranks to rise above the social status in which society has bound them.

For example, if a man is a hostler, or a barber, a shoemaker or a common laborer, it so fixes his social position in society, that if he wishes to rise out of it he is forced to change his profession for one to which society has awarded a higher grade.

So far as photographers are concerned this iron chain by which the different classes are bound as yet lies loosely about them, and it remains for *them* to say what position they will occupy in the social element of society. At present the craft is as varied as the different species of dogs—it has in it the elements of the bull, the St. Bernard, the mongrel, the greyhound, the pug, and the diminutive lap-dog.

Please do not infer, however, from this homely simile, that I believe photographers to be *dogs*! though in many cases they are obliged to work harder for even a scanty living than the brute that wakes at their call.

In the old world the grades of labor are even more distinctly marked than in the new. There, if a man happens to be a trader or mechanic, there is no hope of his ever being anything else; but here (in the new world) a man may be a rail-splitter, and yet rise to the highest honors it is the privilege of the people to bestow. Even a photographer, if not neglectful of the political primary meetings of his district, may rise to be an alderman, provided he be an adopted citizen from some foreign isle! It has been said and oft repeated, that “any profession that implies scholarship, implies it to the extent that it opens the door to the better circles of society.” If this be true, there is no good reason why a photographer should not be as highly esteemed as the doctor of divinity, for he requires quite as much mental discipline and genuine piety to keep *his*

tongue from speaking guile, especially when attempting to make beautiful some pug-nosed infant, or red-haired, pock-marked, cross-eyed maiden.

He must have, too, all the sagacity of the lawyer, or he will fail to prove to half his patrons that their shadows are truthful or flattering! And last of all he requires the skill of the chemist, so that he may mix and handle the chemicals with which he deals, that they may never fail to act in harmony with his own wishes, and without disturbing the equilibrium of his subject.

Now I think it must be clear to all intelligent photographers that it is as much their duty to read daily a chapter from the Book of Job as it is the duty of the most saintly divine, for it is his business to simply preach patience, while they are forced to *continually* practice it.

He should be familiar, too, with the physician's art, for he is often in want of an antidote to the poisons he daily handles, and which are, perhaps, imperceptibly though certainly undermining both his mental and physical strength.

And now let me say in closing, and I say it seriously, that the student of photography who has a quick eye to see the vast field of study which this art-science involves, will not fail to perceive that there is no end to it; and to know all, and be a master in all, is quite beyond the reach of even the most gigantic intellect the world has yet produced. Here, then, is a work worthy the attention of the best minds; for it embraces either directly or indirectly the entire realm both of science and art.

Our best students in art have proved to be our most successful photographers, and our best chemists have always been their right hand men, and it has been proven that neither could succeed in the highest degree without the other.

To such as these there has been no bar to exclude them from the best social circles of either wealth or intellect; and by holding this vantage ground the most refined pleasures of the highest civilization have been theirs to enjoy.

Surely with examples like these the most humble student of photography should take courage, and strive at least to master the theories and become familiar with the science and rules of art its practice involves. To be satisfied with knowing simply what has daily to be practiced is the sure way to breed dislike, and

lower the dignity that the profession should justly claim. Such work must inevitably lead to the most disastrous results, from a social point of view, and at last sink its subject into such a slough of despond that he will be forced to cry out—

"The thorns that I have reaped are of the tree I planted;

They have torn me and I bleed.

I should have known what fruit would spring from such a seed"

[Applause.]

The PRESIDENT. I now have the pleasure to introduce to you Dr. J. P. Garrish.

The Doctor, who is presiding officer of the Farmers' Club, then made an eloquent extemporaneous address, reviewing the early days of the art and recalling several almost forgotten facts, but unfortunately we have no notes of it.

The PRESIDENT. Mr. Thos. D. Stetson, the President of the Polytechnic Section, will now make a few remarks as a member of the Institute.

Mr. Stetson believed in the American Institute. He worked for it. It was a privilege to bear a part of the labor this institution is doing in aiming to encourage honest work. It caused improvements; it diffused a knowledge of improvements; it aided to teach the use of improvements. We live in an age which brought duties as well as blessings. The Episcopal prayer book don't go far enough when it tells us to give thanks for preserving our lives. We thank God that we were born, and especially in this age, and in this country. It is Christian to work for others as we do in associating in the American Institute.

It is not beyond our sphere to foster and develop an appreciation of beauty as well as use. The great mass of the people need developing in this important branch and source of happiness. One duty of the Photographical Section is to propose and urge ways to reward, encourage, bring out and appreciate fine art. We want decorative art the lowest grade; we want art proper; things of beauty for their own sakes; possibly we may encourage high art, the depicting of nobility of spirit far above our ordinary experience. All are elevating. We want them.

Photographers often miss in the artistic fac-

ulty. Full of the chemistry and manipulation, they fail in pose and expression—artistic conception. Outdoor artists sometimes amusingly fail in getting the inspiration of their subjects. It is not all, perhaps not any of it, the fault of photography. It is largely the lack of something in the photographer. Among instances he cited the main entrance to Druid Hill Park in Baltimore, where the instrument had been placed so as to get the entrance building, but almost entirely miss the grand view of the road beyond with its two lines of mammoth vases that mainly enchanted the landscape lover. It is in harmony with the great work of the Institute to not only promote the picturing by photography but to promote the aims that the picturing is for, the greatest good of the greatest number, by making the community more appreciative of artistic merit. We may and should not merely discover and publish the unfortunate want of appreciation in the community, but do much by just and widely diffused criticism and by prizes and honors to remove it. [Applause.]

The PRESIDENT. Our friend Mr. Beach will now address you on—

Some Aspects of Amateur Photography.

Mr. F. C. Beach, President of the Society of Amateur Photography, responded to the toast by describing how the amateur takes up photography, some of the difficulties he encounters, and some of the curious notions he entertains of how the apparatus should be operated. As his knowledge advanced he threw aside his cheap machine, and purchased more costly and better ones. By doing better work he experimented in some of the many applications of photography to different branches of science, and by patient investigation often discovered something of value to the community. Some of the best formulas for the development of dry plates had originated with amateurs. An incident of how the amateur aids the professional photographer was related. A gentleman spent his summer vacation near a country village, in which was a resident photographer barely able to earn his support; while taking pictures, attracted by operating his instrument, many persons asked him to take their photographs and what they cost. He always told them he would take a negative, and as it cost so little he would charge them nothing. He would make them a present of the negative, and if they wished any prints they could de-

liver the plate to the village photographer who would accommodate them. He had previously advised the photographer to charge a good price for the work. In a short time his orders became so plenty that he was soon placed in very comfortable circumstances. Thus it was shown while there may appear to be an antagonism between the professional and amateur, he frequently renders to the former substantial benefit. [Applause.]

The PRESIDENT. The next toast will be responded to by Mr. Percy A. McGeorge on—

Photography as an Auxiliary in Education.

MR. PRESIDENT AND GENTLEMEN:

Did it ever occur to you, gentlemen, how much more sensitive the eye is than the ear? or did it ever strike you how much more retentive the eye is of a beautiful picture or of an ordinary engraving than of a printed page? Why is it therefore that the camera, the lantern and the stereoscope have not been more generally employed in the great work of systematized education? Is there anything more engaging to old or young? and, because they are so, should they be regarded as toys? Is there anything more instructive? Look at that beautiful transparency. What can be more impressive; what more effective in relieving the dull tedium of the class room? what can exceed the interest fine pictures of that class awaken, especially when supplemented by a few fitly chosen words? and what can induce such self-forgetfulness?

I cannot conceive why it is still deemed necessary to deprive exuberant youth of anything that makes life joyous, and to ignore for a few generations more that inherent and innocent thirst for facts which Nature has so generously implanted.

And what cannot be successfully illustrated by the camera and lantern? Scarcely a single subject, science, or art may not be elucidated by them. It is not to say that beautiful landscapes, or celebrated people, a fine piece of statuary, historical piles of architecture, or any of the creations of human genius, or even river and lake or sea, can be faithfully portrayed—and, by the way, whoever not having seen it for himself could form a just conception of that grand old ocean, beside whose murmuring waves we sit to-day, unless the camera depicted it—that tireless deep whose monotonous flow suggests eternity! What but photogra-

phy can ever successfully counterfeit the work of wind and wave, of sun and shade upon its surface!

And how many of the world's marvels, or even the commonest of our daily surroundings, had we a rational idea of before photography lent its unerring aid! How grotesque were our fancies regarding the movements of animal and man, that have been gazed on time out of memory by millions of our species! And by means of it what have we not learned of the spectrum, and of existing worlds unseen by mortal! What of the pale beams we call the nebulae, or of the microcosms that feed upon us and bring death! What of those reproductions by camera and microscope, etc., that detect the minute forms of vegetable fiber, and the purity and quality of everything we eat and wear; and what of those strange records of the pulsations of human life in health and sickness and in dissolution!

And the stereoscope. Why has that lost our grasp? Was ever so complete a charm conferred by instrument, whether in the quiet of the fireside, by land or sea, in city or wilderness, at home or abroad, anywhere and everywhere, of family, friend or foe? By means of it and within the compass of a few square inches the whole world revolves, and all mankind, of every race and tongue can read, without interpreter and without mistake. Not only this, the stereoscope has made another conquest—the past becomes the everliving present.

But I will not weary you. Pictorial language was the first our race possessed, and heaven knows if it may not be the lasting one. Surely, then, should not the lantern, the camera, and stereoscope be found in every school, if not in every household? [Applause.]

To Mr. Henry M. Parkhurst we are indebted for the following, who by reason of the lateness of the hour was not called on by the President, but kindly supplies his notes.

MR. PRESIDENT AND GENTLEMEN:

Your introductory remarks, Mr. President, have relieved my mind upon a doubtful question, whether I had a right to call myself an Amateur Photographer. I can now read my title clear in the near future. I came here with a few plates to expose. I was indebted to *your* kindness for directing the camera, adjusting the focus, taking off the cap, and put-

ting it on. The negatives were exposed. That is the first step. The next will be to send them to Mr. Roche to develop, when he has finished the arctic scenery. Then I shall send the negatives to Mr. Lewis to print and mount and send the finished pictures to you as my credentials. Of course you will say, Did you make these pictures? Certainly, I reply; if I did not, who did? Besides, "they all do it," even the professionals of 38 years standing. I go into the gallery of my friend upon my right (Mr. Bogardus) to have my picture taken. He hands me over to his artist to pose me and expose his plate. Another takes it and develops it; he knows nothing, he says, about developers. Another prints it; and all the professional does is to put his name upon the back; nay, even that is done for him by his employee. Now if the professionals can take their pictures upon the legal maxim, "*qui facit per alium facit per se*," "he who does a thing by the agency of another does it himself," surely we who are merely dabbling in dry plates can avail ourselves of the same principle, and claim to be amateur photographers.

Mr. W. E. PARTRIDGE, who was cut off by the lateness of the hour, contributes the following humorous paper on—

Lost Friends.

MR. PRESIDENT AND GENTLEMEN:

The subject of the toast appeals to my feelings, for, like many another amateur, photography has cost me many a friend. In reply I can only speak of the friends and how I have lost them. My experience will stand for that of almost any of my brother amateurs with whom I am acquainted.

It was with a sense of misgiving, shortly after I had my apparatus in working order, that I heard a stylish young lady of my acquaintance, of the type known as a dizzy blonde say, with the most bewitching smile on her pouting lips, "Now you have an instrument, you must take my picture." Doubting my own ability as well as that of my sitter, I struggled against the fate as long as possible; but it had to be done, and when done a proof was demanded. There was no photographer near, no sensitized paper within reach, and the "blue print" was the only thing with which I could meet the demand. When presented to her, with a candor which was more cutting than charming, she said "I like photographs

a great deal better than those things;" then added, "I don't think this looks much like me; can't you take photographs?" I explained as well as I could in regard to printing, etc., when she finally concluded the conversation, turning her blue eyes reproachfully toward me, by saying, "Bogardus made a great deal nicer picture of me than that." Need I say that the negative was intensified by means of a very large hammer, and that I had irretrievably lost a friend.

Friend No. 2 was also a lady, a teacher of a bible class, stylish in dress, with a figure to captivate the artist and break the heart of a photographer. One day she invited me to go on a little private excursion to the country residence of the Sunday-school superintendent. As I turned away after accepting, I received a most bewitching look from her brilliant black eyes, and the suggestion that I had better bring my instrument along; I felt that it was the beginning of the end, and I was about to lose another friend. The day came and we had our excursion with a dozen ladies and as many gentlemen; of course a group had to be taken. In the first picture somebody laughed, and in the second somebody moved; in fact, somebody included nearly everyone in the group. Finally I arranged them in a tolerably satisfactory manner so that moving was not likely to be other than intentional. I told them I was ready, and, just as the cap came off, some one in the front row shouted, "open your mouths." Fancy the effect. To my horrified sight the most of them appeared as though the tops of their heads were islands with a yawning gulf encircling them in the place where the mouth should have been. I was discouraged, but I essayed two or three more plates. Before I finished I succeeded in making exposures on all of my twelve plates. My charming Sunday-school teacher remarked, as we parted, "Now you will send us proofs of those as soon as you can; we are very anxious to see them." The remark was echoed by all the twenty-four persons present, and I began to think that the excursion was likely to be rather a costly affair for me. I religiously printed one of each, of the five half passable negatives and sent a set to each of the twenty-four friends. Need I remark that none of them speak to me now, and when I pass any of the ladies there is an acidity apparent in the air which is out of all proportion to the crime which I committed.

My next misery befell me in the country.

There were a dozen houses in the town where I spent my summer vacations. I knew most of the families and was related to several. Of course at the place where I boarded for the summer the house had to be taken from the front, with all the windows open and all the family sitting on the front door-step looking at the camera. Then a view of the house was taken from the rear, with all the windows open, likewise all the doors. This time there was a person in each of the windows, and each of the doors was decorated in the same way. All the picturesque little bits in the way of wash-tubs, clothes-poles and other accessories were carefully removed. My friends professed themselves delighted with them, and then they said I must go over to cousin So-and-so's house and take a photograph of it. I was persuaded and exposed two plates on it and came home and found they had been wasted, for the exposure was not quick enough to catch trees which were in violent motion; so two other plates had to be expended. The upshot of the matter was that I used up one 8 x 10 plate on every house in the village. They were delighted even with the blue prints of their houses; but the sequel was awful. When I left they all invited me to send them a nicely mounted print of their particular house; and they would like both views, because they did not know which was the best. These prints have not been sent, and I am morally certain that I have 238 mortal enemies where I formerly had friends.

If such things continue the amateur photographer will be in the position of the left-handed son of the great prophet, in regard to whom it is prophesied—"his hand will be against every man, and every man's hand against him."

The hours sped quickly on, the happy hits of the speeches being loudly and frequently applauded, when at length the Chairman gravely announced the fact that time and tide, boat and train were inexorable, and the mirthful diners dignifiedly dispersed.

SEVERAL kind friends have sent us some spare copies of the *JANUARY BULLETIN*. Now we can supply a few more full subscriptions to date for 1884, or complete those which are lacking.

Report of the Photographic Section of the Amer. Institute.

NEW YORK, Sept. 2, 1884.

PRESIDENT NEWTON in the chair.

MR. MASON. I have received three numbers of ANTHONY'S PHOTOGRAPHIC BULLETIN; from the Photographic Society of Great Britain, several numbers of their journal; also of *Photography*, the new publication from the Photographic Society of Great Britain in relation to an exhibition to be held this year, commencing October 4th and closing November 13th.

PRES. NEWTON. The report of committees.

MR. GARDNER. The Executive Committee would report that the next meeting will be occupied with the consideration of *Photographic Literature* by distinguished members of the association and invited guests.

The annual Field Day Excursion of the Photographic Section of the American Institute took place as appointed on Thursday, Aug. 28th, at Coney Island. The amateurs and professionals were out in full force and captured everything of interest they chanced to see. The members of the detective camera squad allowed no beautiful face or form to pass them by unnoticed, and hence, there is no doubt, more pictures were taken than on any former field day of the Section.

At 4:30 P. M. the officers and representatives of the party were called together and tested the relative strength of their guns by firing at each other. After thus exhausting both their powder and their strength, they retreated to one of the spacious private dining rooms of the Hotel Brighton, where was administered to the relief of the wounded and hungry such restoratives as their several cases demanded. Surprising as it may seem, under this treatment in less than an hour the tongues of the dumb were unloosed, and naught was heard save the sallies of wit and wisdom that put the table in a roar. President Newton spoke learnedly but facetiously on the question, "What is an Amateur, and what is a professional?" and so muddled the heads of all present that when they parted each was mentally asking the question—"What am I?" and the answer came reverberating through his brain, "no one can tell!" Next followed Mr. Abraham Bogardus on "Photographic Conventions; their Uses and Abuses." The tone of the speech, like the character of

the man, was warm and genial, and was received with hearty applause. This was followed by Col. V. M. Wilcox on "Photographic development," who treated this subject from an entirely different point of view from that which professional photographers usually consider it. He cleverly proved that photographers have much to develop besides their plates, and that the art required men of brain as well as hands.

Mr. Geo. G. Rockwood responded to the toast, "The Ladies and Babies," and in the course of his remarks demonstrated that if not for these, portrait photography would be naught but a barren field; that the esthetic taste now noticeable in all first-class galleries would vanish, and the culture and refinement now essential to success on the part of both employer and employee would give place to ignorance and impudence. Mr. Rockwood closed by reading a short poem *apropos* to his subject, and was followed by Mr. J. B. Gardner, who spoke of photography from a social point of view. We can give no extracts of it here without quoting the entire speech, and the limits of our report will not permit, for it was an epitome in itself, and so compressed and woven together that to take a part would only destroy the beauty of the whole. Dr. J. P. Garrish, President of the Farmer's Club, followed by responding to the toast, "Photography; its Birth and Early History." This served as a reminder to some of the older members of the craft of facts that had no doubt well nigh slipped their memory, and of disputes that have arisen from time to time as to who was really first in discovering the essential principles on which photography is based. Mr. Thos. D. Stetson, President of the Polytechnic, then spoke of the American Institute—the good work it had done, what it was now doing, and what it was competent to accomplish in the future. Mr. Stetson was followed by Mr. F. C. Beach, who spoke of some phases of "Amateur Photography." This speech, like Mr. Gardner's, to do it justice should be quoted entire.

Mr. P. A. McGeorge responded to the toast, "Photography as an Auxiliary in Education." This response bore the evidence of forethought and careful study, and contained many useful and beautiful thoughts in the most apt and fitting forms of expression.

At the close of this speech a motion prevailed to adjourn, and thus ended the field day dinner of 1884.

The report was adopted.

Pres. NEWTON. We have this evening two papers, one by Mr. Faris on *Photo. Reminiscences*, and one by Mr. Grenier on *Line Work Negatives*.

Photographic Reminiscences.

Although it is not necessary to have an eye in the back of the head, yet it is sometimes profitable to cast a retrospective glance at the ground over which we have passed.

One object in printing these few reminiscences of olden time is to acquaint in some small degree those who now practice the art-science of photography with some of the trials and tribulations the pioneers had to undergo.

The Daguerreotype (the foundation of the photographic superstructure) did not spring fully perfected from the brain of its illustrious inventor; but the grand discovery that the image formed by the camera obscura could be secured and rendered permanent in all its beautiful detail was there, ready to be brought to greater perfection and utilized in the efforts and experiments of others.

Daguerre himself was unable to produce a picture of the living subject on account of the length of time required to make the impression, the iodide of silver formed on the surface of his plate not being sufficiently sensitive to the action of light.

Prof. Morse of telegraphic fame (who was in France when the discovery of Daguerre was made public) in connection with Dr. Draper of New York, were, I think, the first to use the fumes of bromine in connection with iodine as an accelerator. This was the first great stride towards utilizing and rendering practical this stupendous discovery.

To be able to make an impression without the direct rays of the sun on the object was the great desideratum; in other words, to make a picture in the shade.

I recollect very vividly the first time I ever had my daguerreotype taken. After polishing the plate as well as we knew how with our very imperfect appliances and exposing it to the fumes of iodine until it assumed the requisite golden color (we had a piece of gilded metal for a guide as to color), it was placed in the rude camera. It required a sitting of fully five minutes with the sunlight streaming through a large pane of blue glass held in the hands of my co-experimentalist. You may be sure I was glad when the sitting was over. After duly placing the plate over the mercury

bath and heating it to the right degree, you may imagine with what anxiety we took turns in watching, through the small piece of glass in the front of the mercury box, the gradual development of the picture. The result was thought to be wonderful; in fact, it was tolerably good considering the circumstances. Of course, the eyes were minus; if I could have kept them stiller they would doubtless have been more distinct. This was before the discovery of the accelerating property of bromine.

After the discovery that bromine made the plates much more sensitive to light, we found it also made them much more sensitive to other influences. Then the trouble commenced, as bromine proved very fractious and intractable. We did not know at that time the best manner of applying the fumes to the plate. Various means were devised to accomplish the desired end.

The first bath that was used was simply a wooden box, the inside in the shape of an inverted cone, with a place to insert a small bottle in the bottom containing a little bromine and water. The way it was used was to remove the stopper of the bottle and let it remain open for the requisite time with the lid of the box closed; then quickly inserting the stopper and removing the bottle, and turning the box upside down in order that the fumes might be distributed as equally as possible; then placing the plate (after it had been coated over the iodine) in the box until the bromine had acted sufficiently. Another plan, a great improvement on the foregoing, was a box with a lever projecting, by which the stopper of the bottle could be removed and replaced as often as was necessary to charge the box; the box also contained a fan to distribute the vapor. This was termed the pump bath. The application of the bromine was the sticking-point, as every daguerreotypist will recollect, especially if he has had the pleasant experience of being "stuck." Sometimes it would be impossible to get a good result for days at a time. Frequently the plate would come off the mercury bath without the slightest trace of a picture; then we would get perhaps an eye and a half, and part of a beautiful nose; all the rest would be covered by a dense fog. The worst of it was that at this early stage of the art we did not know why these things were. As there was no Prof. Stubbs (who was supposed to know everything) to whom we could apply for a solution of the difficulty, we had

to work it out each for himself; one knew very little more than another; we were all in the same boat. After the bromine was combined with other substances, such as lime, chloride of iodine, etc., the coating of the plate was much more easily managed.

Another difficulty we encountered was the solarization of the whites; the shirt-bosom and collar would come out a beautiful steel blue, as if the laundress had given them several extra dips in her blueing solution. This was remedied in a degree by covering the linen with pieces of black silk during the greater part of the exposure.

The greatest improvement, in my opinion, ever made in daguerreotyping was (as improvements frequently are,) the result of accident. A Mr. Johnston, one of Plumb's operators in New York, after coating a plate as usual over the iodine and then over the bromine, accidentally returned it to the iodine box and coated it the third time. Thinking, of course, the plate was spoiled he concluded to try if it was so in the camera. After developing he was agréably surprised, not only to see a picture, but one of the most beautiful chemical effects he ever produced.

Previous to this improvement the daguerreotype presented a cold, metallic appearance without much body. In short they were very unsatisfactory as a picture. After the triple coating came into use the pictures were all that could be desired; they possessed a warmth and depth of tone that was very pleasing. The whites especially, which heretofore were so hard to manage, assumed their true value.

It does one good, even in this day of starting improvements in photography, to examine some of those fine old daguerreotypes with their beauty of detail, exquisite modelling, softness and harmony of tone; they stand unrivalled by pictures produced with any subsequent process. It is interesting to note in a new industry or in the application of a new discovery how one improvement suggests another, in the manner of polishing a plate, for instance. We first used finely pulverized rotten-stone and a tuft of cotton, with a circular motion, which of course left minute scratches all over it; in order to obviate that difficulty we used a stiff brush crosswise of the plate, thus laying the scratches all one way. That not being satisfactory we then tried a buff-stick covered with prepared buckskin and rouge, or prepared oxide of iron. This was a great improvement over the brush. After

that we used, instead of the buff stick, the daguerreotype tread-mill, a large wooden wheel in the form of an old fashioned grindstone, the buff leather being tacked on the circumference. We found some plates did not work well on account of the impure silver used in their manufacture. To obviate that difficulty, and to render them uniform, we applied the new process (new at that time) of precipitating pure silver on the surface by the aid of the galvanic battery; galvanizing the plates two or three times, and using the buff wheel between each application, made them all that could be desired. The more labor bestowed on the plates in their preparation the better the finished picture. The camera and lenses used in the beginning were very crude and imperfect when contrasted with the beautiful apparatus of the present day, sparkling with nickle plating and all kinds of ornamentation (some of it more ornamental than useful).

The first lenses I used were two plano-convex ones, placed in the tube with their convex sides together. They were about four inches in diameter and would cover a field about the size of an old-fashioned penny, and not very sharp at that. The image on the ground glass had a beautiful prismatic appearance around the edge, which was not very conducive to sharpness of outline. Next came the achromatic lens, of course without the prismatic effect, and with a much flatter field. This was a vast improvement on the old plano-convex. In our ignorance we supposed that the larger the lens the quicker the picture. I recollect being very much disappointed in a lens ordered from New York on account of the small size, and was surprised to find that it worked about as rapidly as the larger ones.

In the beginning a great many efforts were made to construct a camera without any lenses. A friend of mine incurred considerable expense in having a concave mirror cast of speculum metal, about ten inches in diameter, with an aperture in the centre through which to see to obtain the focus. He ground and polished it himself, and after a great deal of labor in finishing and mounting in a tube, found that the field it covered entirely too small, even to make a small daguerreotype. I believe there were some pictures made by parabolic mirrors.

Another great difficulty we all had to encounter was the almost utter impossibility of procuring the proper chemicals and appliances with which to do our work; especially was

this the case in the beginning of photography as applied to making pictures on paper. We had to make our own gun cotton, our own iodides and bromides; in short, it was exceedingly difficult to obtain anything we could rely on. At the first, even after we had succeeded in making a passably good daguerreotype, we were unable to procure a proper setting for it. Cases were very scarce and expensive, and the pictures were too small to place in frames to advantage. I conceived the idea of making my own cases, procuring the wooden part from a cabinet maker. When I came to cover them I had nothing with which to emboss the morocco, and they did not look well plain. As "invention is the child of necessity," I hit on a plan to make my own embossing plate. Obtaining a book with a very pretty design embossed on the cover, sharp and in good relief, I covered the outside with gold leaf in order to give it a continuous metallic coating, and made an electrotype of it (the electrotype then was a very recent discovery), backing up the plate with the proper thickness of type metal in order to work it in a common printing press. Thus I was able to make very pretty embossed morocco cases.

The electrotype apparatus used was a very primitive affair, merely a water-tight box with a porous diaphragm dividing it into two parts, in one of which was suspended my book cover in a saturated solution of sulphate of copper; in the other, water acidified with sulphuric acid, in which was suspended a zinc plate. The connection was made by a little cup of mercury, in which the ends of the suspending wires were placed.

In the early days of the business (daguerreotyping soon came to be a business), the fight to secure the patronage of the public was as furious as it is at the present day, with the exception that we did not then, as now, use "clubs" in order to knock our business opponents "out of time." An incident in illustration. One of my competitors, for the privilege of taking "the heads of the people," induced Herr Driesack, the famous lion tamer, to visit his gallery with his tigers. He succeeded in making a very fine whole plate group of Mr. D. and his two pets.

This was a regular "ten strike," and for some time I was beaten; but at length I got even, if not a little ahead, by having two elephants brought to my gallery. As we were unable to induce them to go up stairs, we had to be satisfied with taking their portraits in the

street, which we accomplished successfully by the aid of the police.

Pres. NEWTON. We have listened with a great deal of interest to the account of the parent of photography, and we will now have the pleasure of hearing Mr. Grenier tell us something of one of the younger children of this parent. He has baptized it *Line Work Photography*.

Mr. GRENIER. I am very sorry not to be able to do what I would have liked to, but I did not receive notice until yesterday, and had little time to prepare, but I will do the best I can. The first thing is the cleaning of the glass.

Mr. Grenier thought a weak solution of nitric acid and water would be sufficient to clean the plates, if it remained in that solution over night, when they should be taken out, well rubbed, washed and thoroughly rinsed, and coated with the following—

Albumen,	3 ounces.
Acetic acid, No. 8,	1 ounce.
Water,	1 gallon.

The next important item is the collodion, to be made as follows:

Alcohol,	8 ounces.
Iodide of ammonia,	80 grains.
Bromide of cadmium,	32 "
Cotton,	114 "
Sulph. ether,	8 ounces.

On making this collodion the ingredients should be used in the order stated, beginning with the alcohol. The silver bath should be as follows:

Nitrate of silver,	45 grains.
Water,	1 ounce.
Nitric acid, C. P.,	1 drop.

The bath may be used for several days.

On being tested, there should be no precipitate nor fog on the plate, which, after being collodionized, should be put in the bath and then developed without being exposed to the light. After the full time for development, wash thoroughly and fix with cyanide of potassium. If neither fog nor metallic deposit appears, then you may be sure the bath is in good condition. The developer is compounded as follows:

Protosulphate of iron,	18 grains.
Water,	1 ounce.
Acetic acid, No. 8, 4 ozs. to each	16 ounces.

If a flat negative is wanted, ten grains only of the iron will be sufficient.

The key of the black and white negative is the time of exposure, for which the smallest stop should be used, after focussing, the latter being done with a larger one. A focussing glass is indispensable if good work is desired.

Immediately after the negative has been developed, washed and fixed in cyanide of potassium, it may be intensified with—

Sulphate of copper,	96 grains.
Bromide of potassium,	32 "
Water,	16 ounces.

This has the effect of bleaching the film white. If it bleaches too rapidly that may be taken for a sign that it has been exposed too long in the camera. A slow action of the intensifier gives the best results, because it affords a finer grain and a greater deposit. After being well washed a neutral solution of nitrate of silver, 30 grains to the ounce, should be flowed over it to precipitate the bromide of copper, and until the silver is perceived through the film on the back.

The fixing solution, after intensification and careful washing, consists of a solution of hydrosulphide of ammonium diluted to one-third the strength with water, and will render the film darker and more permanent.

Another intensifier may be used for coarse lines, which is—red prussiate of potash dissolved in water and nitrate of lead dissolved separately in water, adding the nitrate of lead to the former until a precipitate is formed and no longer. The film will bleach white, and by the addition of ammonia, as before, it will turn black.

In reply to some questions, Mr. Grenier said that he preferred to use the ordinary Croton, unless the water was distilled by means of a glass or silver retort. He made his bath alkaline with liquid ammonia, and exposed it to sunlight for 10 or 12 hours or more, after having added a few grains of iodide of potassium. The impurities in the water and silver are precipitated by the light, which will be observed to turn alternately red and black and fall to the bottom. When filtered, add pure nitric acid, test with litmus paper until only slightly acid, and it is then ready for use.

In reply to a question Mr. Grenier said, when collodion was too old and acid it may be rendered alkaline by the addition of a small piece of cyanide of potassium, which ought to be removed as soon as the collodion turns white, otherwise the film will be rotten.

In answering a question as to dry plates,

Mr. Grenier said they could not be used for line work, because of the blacks not being clear. They may, however, be used for zinc plates.

Excellent samples of line work, etc., were exhibited.

Mr. GARDNER. You know there are a great variety of cottons in the market, and they are designated by numbers, and there is negative cotton and ferrotype cotton. Which kind do you use?

Mr. GRENIER. Anthony's negative cotton, red label.

Mr. MASON. In regard to intensifiers I propose to give the outline of what I have used, leaving science entirely out. Take sulphur which comes in rolls and is bought in the drug store. Take a bar of rod iron and heat it to a white heat. Hold it over a pail of water and rub it on to the sulphur. The result will be sulphate of iron, which forms in irregular globules and drops into the water. Wash in one or two waters and put in a wide mouth bottle, with a tube or two tubes reaching into another bottle with a short tube, into a third bottle containing ammonia. Put in the sulphite of ammonia, fill it one-quarter full, pour in sulphuric acid, carry it into this bottle of water, where it is washed and goes into the ammonia and is absorbed by the ammonia. Keep it up until the ammonia becomes a golden color, or still darker, and you have the pure iron, which you can depend on.

Pres. NEWTON. Here are some illustrations of the new process by which colors can be photographed.

Mr. FALK. These pictures have been kindly sent to me by Dr. Vogel. In this frame there is a lithograph in the centre, and the other two are photographs of the picture unretouched. One is by the old collodion process, where the yellow dress takes very dark; the other is taken by his new azaline process, where the colors photograph in their true optical values. They are light or dark just as the impression made on the eye. Yellow looks a great deal lighter than blue.

Pres. NEWTON. These specimens that Mr. Falk has presented are of more than ordinary interest, because this is something new, where we see orange and yellow taken almost with the same strength as the blue and violet. In the second photograph we see very little difference between the orange and blue. That is a remarkable fact, and, to a certain extent revolutionary, because it has been a cardinal point

in photographing objects that the actinism of the solar ray was in the ratio of the wave length from the violet to the red, and, by certain chemical combinations, the effect of the solar ray seems to be changed; and it raises an important question in reference to the correctness of our theory whether the sensitive film is slightly dependent upon the vibration of the ray. It may be that these chemical combinations produce a condition in the film that makes it possible for the solar ray to act in a manner analogous to that which it does on the vegetable juices. It was published forty years ago by Dr. Draper, that the vegetable juices were more sensitive to the less refrangible rays than they were to the more refrangible—more to the red than the violet.

I had expected to see here to-night a gentleman who took some views on the field day with the detective camera. Here are some pictures taken by Mr. Roche assisted by Mr. Mason.

Mr. NEWTON. A gentleman here has a plate, an instantaneous exposure, which has some peculiar markings on it. He would like some one to explain this and to tell him the cause and the remedy. It is a gelatine plate. How long have you had them?

Answer. About four or five months.

Mr. NEWTON then made some remarks attributing the difficulty to the method of packing, that will appear in revised form later.

Mr. MASON. It will be remembered by those who attended the last meeting in June that there was some discussion in regard to the fuming of albumenized paper by ammonia, as to who discovered it. I have seen several articles in the different journals about this, and I have the documents here to prove what I considered to be the beginning of the whole matter. But it is late now and I don't see another gentleman who took part in that discussion, although I requested them to be present with proofs, and it seems that by a peculiar combination of circumstances and the absence of the witnesses it is impossible to go on with the discussion, and I suppose the judge will have to postpone the trial of the case until the next meeting. I noticed one thing in Mr. Faris's paper which I did not know, that is, in regard to the third coating of the plate being discovered accidentally.

Mr. GARDNER. I had a number of gelatine plates which had been thrown aside for a while, and I asked Mr. Beebe for the best method to clean the glass so as to use it again. He merely used boiling water, and by that means

cleaned the gelatine surface from the plate so that it could be used. I followed his instructions and put them in boiling water. I found that a portion of them peeled off very well, while others did not seem to be very clean. I put one in the bath and I obtained two pictures, the one I had just made and one which was embedded in the glass. I concluded to try a strong solution of potash. After that I washed it again, and still the two pictures remained. I saw one of the dealers in these plates and he said ammonia would cure it, but that failed. Now I tried sulphuric acid, and when the plate was dried again the surface remained.

In all these gelatine plates they use a substratum. Makers are advertising that they will take back their plates and recoat them, and the consequence is that on one plate will be seen a view in Virginia and one at Niagara. In attempting to use old plates, or new plates recoated, I think there is danger,

A GENTLEMAN. I took a negative, and found that the film could be removed easily, and I noticed an image on the glass.

Mr. GRENIER. A weak solution of nitric acid would remove it.

Mr. FARIS. After cleaning a plate thoroughly and exposing it, one image develops up strongly and there is another like a shadow in the glass.

Pres. NEWTON. The glass itself must have been sensitive to light to a certain extent. The picture could not have been on the glass if the emulsion had been entirely cleaned off.

A GENTLEMAN. There are a great many daguerreotypes badly faded. I have been able to restore pictures that were scarcely visible on the daguerreotype plate by the action of heat and a weak solution of chloride of gold.

Pres. NEWTON. A great many of the manufacturers use gelatine for a substratum on their plates. A small quantity of bichromate of potash dried and exposed to light renders it insoluble. Speaking about daguerreotypes, Dr. Draper in his scientific memoirs claims to have made the first daguerreotype of the human face, and that was a picture of his wife. I presume Mr. Mason remembers the last time he exhibited it; it was twenty-five years old, and then the action of the light had caused the outline of the picture to go entirely through the copper plate and was visible on the back.

A vote of thanks was given to Mr. Faris for his papers and to Mr. Grenier for his instructive lecture. Adjourned.

Association of Operative Photographers of New York.

NEW YORK, September 3, 1884.

MR. BUEHLER in the chair.

The minutes of previous meeting were read and approved.

Mr. McGEORGE. Mr. Moreno came here to-night at my solicitation. He has the misfortune not to hear much and is not able to speak our language, but he has the good fortune to make some very fine work. Is it not encouraging to see what one laboring under such disadvantages can do—work worthy of anybody? Mr. Moreno is an employee as well as an employer—an operative employer, as it were, for he does his own work.

Mr. BUEHLER. These pictures are from plates that have been fogged, not light-struck, but made with foggy emulsion. Mr. Moreno by his process, which was published in the BULLETIN for August, has been able to clear them.

Mr. McGEORGE. Two of these prints represent—one fifteen years' experience with the wet, and the other fifteen minutes' trial with the dry plate process.

Mr. BUEHLER. With any good emulsion a good dry plate negative can be made at the first trial by an expert operator. These are all made on Eastman's plates. In this picture of the same lady taken twice on one plate, a mask was cut sufficiently only to show this part (illustrating). The mask was put right in front of the sensitive surface and that was first exposed. It opened like a flap and closed again, and the person changed positions. It is very ingenious. The exposures have to be as nearly alike as possible, in order to avoid a dark line where they join. Mr. Moreno has succeeded in getting four exposures on an imperial plate, one person changing position four times in the same manner as above.

Mr. McGEORGE. I have done what little I could to further the interest of the Association, with the hope of filling the gap made by the resignation of one of its eminent members, Mr. Duchochois, who is an old chemist and likewise an old photographer, and probably knows as much of photographic chemistry as anyone in the city, has generously offered to give before the Association a course of interesting lectures in a popular way explanatory of inorganic chemistry and chemistry as applied to photography. Mr. Duchochois has been a chemist all his life, and if I may be permitted

to say it, it has been his ambition to discover and reveal a process for photographing in colors, in which he partially succeeded at one time. I have no doubt his words will be of interest to the younger photographers, at least to those who have had no opportunity of becoming familiar with the subject elsewhere.

Mr. BUEHLER. You have heard what Mr. McGeorge has brought before the Association, and I can only heartily welcome the gentleman, and would like a motion made conveying our thanks to Mr. Duchochois.

The motion was made, seconded and carried.

Mr. POWER. I move that a vote of thanks be given to Mr. Moreno for the nice portraits he has shown us and the information given about fog, and I hope he will come to our meetings often, and that he will be able to speak English soon. Carried.

Mr. McGEORGE. I desire to see that line which has heretofore existed between the employer and the workman forever obliterated. I hope the time will soon arrive when every photographer will be at once his own employer and his own employee.

Mr. BUEHLER. If the photographic employers would acknowledge the work of each department—the work of the operator, printer or retoucher—there would be a great deal better feeling between them.

Mr. HECKLE, printer at Rockwood's, exhibited some very fine views of steamers passing up the Sound, taken with Anthony's \$12 camera. Adjourned.

The Society of the Amateur Photographers of New York.

THE regular meeting of the Society was held at their rooms, 1260 Broadway, on the evening of the 9th of Sept.

The President, Mr. F. C. BEACH, was in the chair.

A communication thanking the Society for its offer of the use of its rooms to any of their members when here was read from the Secretary of the Pacific Coast Amateur Photographic Society.

The PRESIDENT said it was with much regret that he had to announce the loss of Mr. J. F. Apgar, who died on the 28th ult., in the Adirondacks. He was present at their last meeting, on the 12th ult., and took an active part therein, but complained of not enjoying very good health. Mr. Apgar was particularly interested in photography, and took much

interest in their Society, cheerfully endeavoring to promote its interests at all times. He thought it was fitting for the Society to pass some resolutions of respect to his memory.

The SECRETARY then read the following resolutions, which were unanimously adopted:

Resolved, That in the untimely death of Mr. J. F. Apgar this Society has lost a valued member, whose keen interest in everything pertaining to the welfare of the Society, and whose many personal qualities, won for him the esteem of all with whom he came in contact.

Resolved, That this resolution be entered upon the minutes of the Society and a copy be sent to his family.

The following gentlemen were elected members: Mr. F. A. Greenleaf, Mr. Jos. T. Low, Mr. A. W. Durkee, Mr. David O. Edson, Mr. Henry W. Post, and as a subscribing member, Mr. Geo. G. Rockwood.

Mr. RIPLEY moved that Mr. A. L. Henderson, whose attainments in the art were only exceeded by the kindness which impelled him to impart to others what he had gained by hard work, be made an honorary member of their Society.

The motion prevailed.

Mr. HENRY V. PARSELL was elected to fill the vacancy in the Committee on Arrangements, caused by the death of Mr. J. F. Apgar.

Mr. T. C. ROCHE presented to the Society an excellent cabinet photograph of Mr. Apgar, for which he received the thanks of the President.

Mr. JOHN CARBUTT, of Philadelphia, who was present, gave the Society several fine specimens of 8 x 10 photographs, among which were pictures of the interior of a mine, the details in the latter being particularly good considering the difficulties experienced in lighting.

The PRESIDENT acknowledged the receipt of some eighteen beautiful views of Western scenery, showing fine taste in the selection of subjects, from Mr. F. A. Greenleaf, of Helena, Montana.

Mr. A. L. HENDERSON exhibited several fine specimens of large unmounted photographs from negatives made upon Inglis plates, which attracted much attention. He presented to the President two pictures made with an apparatus costing but four cents, which consisted of nothing more than a common grooved wooden box, having a small opening at one end, covered with a sheet of

brass no thicker than a piece of paper, and punctured at the center with a fine needle or pin. To make a negative, the sensitive plate is placed in one of the grooves in the box, about $2\frac{3}{4}$ inches from the pinhole; the box is then made light-tight and turned toward the object to be taken. The exposure for a plate testing twenty on Warnerke's sensitometer is about forty-five seconds. The image is always in focus, and its size will vary according to the distance the plate is from the pinhole at the front of the box.

The specimens shown excited much interest. One represented a view from the top of Mr. Henderson's studio, and had an exposure of ten seconds; the other, a portrait taken in a studio with a dull light, was exposed ten minutes. They were remarkably distinct.

The PRESIDENT. I have the pleasure of introducing to you this evening Mr. A. L. Henderson of London, who is a member of the London and Provincial Photographic Association, which, as you are aware, entertains pleasant relations with this society. Mr. Henderson is a very devoted student of our art-science, and has made many experiments on the easiest and simplest way of preparing a substance or film that shall be extremely sensitive to light, namely bromo-argentic gelatine emulsions. He will show you to-night how these can be made, so that the unskilled amateur with a little brains and a minimum of skill can, when he fails to find plates that suit him, prepare them himself.

Mr. HENDERSON thanked the Society for the honor conferred upon him and spoke as follows; "I will endeavor to explain by experiment to-night some of the methods of preparing gelatine emulsions capable of being made and used by amateurs. I now put in this graduate a small quantity of gelatine—about five grains. These 5 grains of gelatine—Nelson's No. 1—I will dissolve in an ounce and a half of distilled warm water. I presume this is not colder than 70 degs. F.; it does not matter much for a few degrees. I now take 240 grains of nitrate of silver and dissolve in $1\frac{1}{2}$ ounces of distilled water. This may be dissolved in 24 drams of water. While dissolving the silver, I will state that the speed of an emulsion depends on several things. First of all, the amount of gelatine; if you take a large portion of gelatine and emulsify with that, you get a very good emulsion, and it is rapid in its action. If you use a small quantity of gelatine to begin with, you get a finer

deposit, which gives greater rapidity. The next method is by adding ammonia to the emulsion; and another method is by heating it, known as the boiling process. The method of using ammonia is, I think, very scientific. It is a very unscientific thing to mix your emulsion at a high temperature, wherein by simply using a small amount of gelatine you run the risk of decomposing it. It would be very much better if you could get a gelatine to emulsify with that will not decompose, or put something in it that will prevent decomposition. I think that 5 grains of gelatine dissolved in $1\frac{1}{2}$ ounces of water will be sufficient to suspend the bromide of silver and make a very fine deposit. Having dissolved the gelatine, I shall make up the solution to 3 ounces, with $1\frac{1}{2}$ ounces of water, and shall add 3 drams or 180 grains of bromide of potassium. I prefer potassium because it is a more stable salt than ammonia. It will be well to carefully test the bromide of potassium, as an impure bromide is apt to cause fog. I shall also add to this solution two grains of iodide of potassium.

I now take $1\frac{1}{2}$ ounces of water and an ounce of aqua ammonia, 880 deg. strength, and put into that $1\frac{1}{2}$ ounces of alcohol. Now, the reason that I make it half alcohol and half water is, that when I put half water in the bulk I have only got half the quantity to displace. The rapidity of an emulsion depends upon the amount of ammonia used as well as the other conditions.

In this case I shall first convert half of the silver into an ammoniacal salt. The reason I take a part in this way is that it won't be too sensitive, and also that I may know that a definite quantity of silver has been converted. If I take half of it, the speed will be perhaps eighteen on Warnerke's sensitometer, which is considered a pretty good speed for an emulsion made with ammonia. The sensitometer test is a very good one.

Now, you see, I have oxide of silver being formed here. [The ammonia and alcohol solution was poured into a portion of the nitrate of silver solution, which turned a blackish-brown color, and was redissolved.] Now, if this was bicarbonate of ammonia instead of ammonia the result would be that when mixed together a great deal of carbonate of silver would be thrown down. You mix the ammonia with the silver by daylight. Mr. Henderson then added the other part of the silver solution to the ammoniated portion, which at

once made an oxide solution of a dark-brown color, and while in this state, without filtering, gradually poured it into the bromized gelatine solution, constantly stirring the same with a glass rod. [This operation should be done in the dark-room.] A milky solution—bromide of silver—resulted, and samples of it were spread on glasses and passed around.

Then followed a series of questions propounded by the gentlemen present, to which Mr. Henderson courteously gave replies.

Mr. ROCKWOOD. Mr. Henderson, in the silver solution you just prepared there with ammonia, when you added the second portion of the nitrate of silver, there seemed to be a surplus of oxide of silver which was not redissolved by the ammonia; in other words, a residuum of oxide of silver. Do you add the ammoniated silver solution in this condition to the bromized gelatine without filtering, and, if so, what becomes of the residuum oxide of silver?

Mr. HENDERSON. It does not oxidize in the presence of so large an amount of bromide—that is, 100 parts of bromide to 240 parts of nitrate of silver—but is taken up by it and the surplus oxide is converted into the bromide of silver.

Mr. ROCHE then stated that he had discovered a method of making a rapid emulsion by mixing the bromide of silver with albumen, and doing away with gelatine.

Mr. EHLMANN asked Mr. Henderson his opinion of the new German process by Hennig, who, to do away with the tedious washing of the gelatine emulsion, precipitates the bromide of silver from aqueous solutions, removes the soluble salts by several changes of water, and then emulsifies with gum arabic. The emulsion is spread on glass plates, dried, reduced to powder, and mixed with the proper proportion of gelatine, which is also dry and in the form of a coarse powder. The dry mixture is said to be very soluble in water, and durable in all climates. Mr. Henderson was not familiar with the process.

Mr. HENDERSON (continuing with his experiments): The emulsion is supposed to be perfectly cold; I now pour it into a beaker and put the gelatine in in a dry state—240 grains. [Mr. Beach then set the beaker in warm water, at a temperature of 120 deg. F., and stirred the emulsion until the gelatine was dissolved.] Now you see that I have used gelatine to start with; afterwards I do not use any fresh gelatine at all. After dissolving the

240 grains of gelatine, I now add alcohol to the emulsion (it usually takes from 8 to 10 ounces), which throws down and precipitates the silver and gelatine in a flocculent form to the bottom of the vessel, where it combines and forms a solid white cake of a granular character. For use, I add enough warm distilled water to dissolve this cake to make 10 or 12 ounces of emulsion. In absorbing the water the alcohol also takes up some gelatine, the bottom there is sufficient gelatine left in the alcohol to prepare another emulsion. the alcohol to prepare another emulsion. [As the alcohol was slowly added, the precipitated emulsion gradually formed on the end of the stirring rod.]

Mr. EHRMANN. It has been said that your emulsion requires an after-digestion in alcohol to promote a greater sensitiveness. Is that so?

Mr. HENDERSON. No, sir; I prefer to use no heat—only enough to dissolve the gelatine.

Mr. TIEMANN. Mr. Henderson, what is your object in putting iodide in your emulsion?

Mr. HENDERSON. It only gives a slight tinge of color, and, I think, taking it in an economical point of view, that a very small portion is beneficial. It makes the film more opaque and prevents halation. I maintain that when the picture is fully developed you should see the high lights on the back, and that any more emulsion that will prevent the image from showing on the back of the plate is a disadvantage. If you use a large quantity of ammonia you must put in a larger quantity of gelatine. I have gone into these experiments very fully, and I have made not less than ten thousand of them in connection with emulsions. I have taken a plate and used a given quantity of gelatine, and then added more gelatine; and I have tried the plate in the camera, and my results led me to adopt the method I have shown you. Referring to the emulsion he had just made, he said it should stand for several hours or till morning, and the clear solution of alcohol and gelatine should then be poured off. The alcohol could be redistilled and used over again.

Mr. BEACH. After that precipitate settles, do you wash it?

Mr. HENDERSON. Oh, yes; either the whole or any portion of the precipitate may be washed, as much as it may be desired to use. After washing it may be redissolved with warm distilled water and flowed upon the plate.

Mr. BEACH. How long do you calculate that precipitate will keep after it is washed?

Mr. HENDERSON. An indefinite time. In the dry state it forms a sensitive pellicle and can be broken up and used by degrees, as desired, at any time.

Mr. RIPLEY. Mr. Henderson, after that is precipitated, how long do you wash the emulsion?

Mr. HENDERSON. I generally wash the emulsion, which I previously break up in small lumps, under a tap, or in a jar containing running water, at a temperature not exceeding 60 deg. F., for two or three hours. I think nothing of letting the tap of water drip on it all night.

Mr. NEWTON. What would be the result if that gelatine was allowed to stand until it was set, and was then broken up and washed instead of being precipitated by alcohol; would there be any difference in the sensitiveness?

Mr. HENDERSON. The result would be almost identical. One disadvantage I have noticed was the carrying off in the washing water of a small portion of the gelatine and the silver compound.

Mr. NEWTON. The tendency would be to dissolve in the water, as I understand you, in washing?

Mr. HENDERSON. If the washing water was at a temperature of 75 deg. F., I should certainly say it would dissolve.

Mr. NEWTON. And when it is precipitated with alcohol there is no tendency to dissolve?

Mr. HENDERSON. It would take a few more degrees of temperature to dissolve it than it would otherwise.

Mr. NEWTON. If the jelly emulsion was washed, would it give a finer image?

Mr. HENDERSON. Yes, but the film would not be as dense as with my process.

Mr. ROCHE. The point is, Mr. Henderson, that the gelatine is in a way coagulated, and is therefore more insoluble than in the ordinary methods.

Mr. HENDERSON. My opinion would be that there is something in the gelatine that is simply dissolved out by the alcohol. As I said in my opening remarks, heat also gave rapidity. If I wished to produce the same amount of rapidity in an emulsion that I have at present, I should have, of course, to adopt some other means than putting in ammonia, but it is not satisfactory.

Relative to the effect of heating his own

emulsion, he said: "Unless you want extreme sensitiveness, it would not be an advantage to digest it at all. In fact, I could do without. We know very well that if you place strong alcohol upon animal matter it does not improve it. I believe, myself, the most perfect way of making an emulsion is Plener's method, by centrifugal force. Plener claims that he can make various emulsions of different speeds, and still retain their relative speeds by the separation of the different grades of bromide of silver by centrifugal force."

He then spoke of the peculiar odor he had noticed that was emitted from a dampened gelatine plate.

Mr. COOPER. In regard to the odor that is given off from the plate after you have dampened it, does that take place in the dark?

Mr. HENDERSON. No, sir; only in the light. My idea of the action of light on the bromide of silver, and the action that takes place as I observed it, is that the bromide is left in an insoluble condition; the silver is left in an extremely fine metallic form, and when you dampen it it is odorous. It is only while in a soluble condition that it is odorous.

Mr. COOPER. May not that be part metallic and part oxidized? Take an ordinary plate—for example; a silver plate—and place it under a developer so that it should oxidize; the oxidation can very readily be cleaned off by cyanide of potassium, but still the effect is possible in the one case. Now what I hold is this, that the silver is in a very oxidized form, which is intensified by the oxidizing action of pyro; then, of course, when it is very thoroughly oxidized it is no longer acted upon by the hypo or cyanide, but it is acted upon in the same way as air acts on the silver on the outside. Mr. Henderson thought Mr. Cooper's theory was good.

Mr. EHLMANN said, respecting some experiments he had made on emulsions: The lamented Von Monckhoven had extensively experimented in the direction of making emulsions direct without recourse to washing, such as the combination of hydrobromic acid with carbonate of silver. He had found emulsions could be made that way, but were slow. I have often expressed my opinion that it might be possible to avoid washing altogether, by forming a bromide of silver in a gelatine solution by combining the elements directly. A few experiments have shown me that an emulsion could possibly be made in that way.

My results were a very coarse and gritty preparation, which gave but feeble negatives.

Mr. COOPER. Has anything been done, do you know, in the way of making emulsions by means of the vapor of bromine being injected into a solution of nitrate of silver and pure distilled water?

Mr. HENDERSON. I have never known of anyone to work out such an experiment.

Mr. EHLMANN. I suspended finely precipitated metallic silver in a warm gelatine solution, and allowed the vapors of bromine to pass through it. A formation of bromide of silver took place, but only partially. The surface of every particle of silver was coated with the bromide, while a center of metal remained within, similar to the chloride of silver when acted upon by light.

Mr. RIPLEY. Mr. Henderson, is it customary for amateurs to make their own emulsion and coat their own plates in England?

Mr. HENDERSON. We have a great many amateurs who prepare their own plates.

Mr. NEWTON. Do you use a substratum on the glass prior to coating it with the emulsion?

Mr. HENDERSON. No, sir; sometimes, if I find an emulsion has a tendency to frill, I add from seven to eight grains of thymol dissolved in alcohol. I prefer a film which has a slightly matt surface.

After the experiments a vote of thanks was unanimously passed to Mr. Henderson for his kindness and courtesy in explaining his process.

Mr. CHAS. EHLMANN brought a specimen photograph sent to him by Dr. Vogel, which illustrated the value of his eosine process. Two 6 x 8 prints were mounted on the same cardboard of a celebrated painting. The print from Dr. Vogel's azaline plate had more details in the shadows, and it was more brilliant in several particulars than the print from the ordinary dry plate.

Many gentlemen deeply interested in dry-plate making were present, and those, to whom the subject was a novelty, were glad to learn from an experienced worker in emulsions how it was done.

At a late hour the Society adjourned.

The chemicals used in the experiments were kindly contributed by Messrs E. & H. T. Anthony & Co.

Mr. Henderson sailed for England on the morning of Sept. 10th, on the steamer Gallia, arriving safely at home on the 19th.

FOREIGN NOTES.

[FROM OUR LONDON CORRESPONDENT]

Quick and Slow Development.—The relative advantages of a rapid development on the one hand, and a slow development on the other, are now being discussed pretty freely over here; and the general opinion seems to be that by somewhat lengthening the exposure and using a less active developer than usual a fuller range of tone and greater brilliancy results.

In order to make the development slower, various means are recommended, Mr. W. England and Mr. F. A. Bridge speaking well of the simple method of diluting the normal developer with more or less water, while others advocate the addition of more bromide—say double, treble or quadruple the normal amount. It is interesting to note that where plates have accidentally received an exposure amounting to thirty or forty times what one would give under ordinary circumstances, that good negatives can be obtained by soaking them in a ten per cent. solution of potassium bromide before proceeding to develop. In such a case the plates ought not to be rinsed after treatment with the bromide; but transferred directly from the bromide bath to the developer.

Phototype Blocks from Negatives after Nature.—Much interest is at present attached to the problem of producing blocks suited for printing in the typographic press from photographs, and excellent results have been obtained in several quarters. Perhaps the best specimen hitherto published is a print by the Ives process issued with the last number of the *Photographic News*; indeed, so good is the result that at first it is difficult to realize that it is an impression from a relief block, and one cannot see such results without feeling that photography must become a formidable rival of the wood-engraver. For printing small numbers of photographs the block process will certainly not come into general use, but when several thousand copies are required the block method has a very decided advantage. The Ives process is based upon

pressure between a Woodbury (or other similar) relief and a grained surface; one or the other of the two being inked. Let us take an example. A plaster cast is made from a gelatine relief, and against this is pressed an elastic stamp, the face of which consists of a series of minute pyramids, the elastic stamp being charged with printers' ink. Where the relief is highest, the pyramidal projections on the stamp are so far crushed down as to make the ink dots unite into solid blacks, while on the shallower parts of the plaster cast there are formed ink dots of a magnitude depending on the depth of the relief. Thus is obtained a picture representing the original photograph in a grain or stipple, and the next thing is to get this picture down on the surface of a clean plate of zinc. There are several ways of doing this, one being to re-photograph the impression on the plaster cast and to make a photolithographic transfer by well-known methods, and another way being to slip off the fatty impression on a film of collodion and to transfer it to the zinc plate by pressure. When the fatty impression is on the zinc the bare metal is gradually dissolved away by dilute nitric acid, leaving the inked portions in relief. As a precaution against undercutting by the acid, the inked plate is now and again dusted over with fine resin powder. The plate is then heated, so as to make the mixed resin and printers' ink melt and flow over the sides of the reliefs left by the action of the acid.

Machines for Coating Plates.—Modifications and developments of the original Eastman machine for coating gelatinobromide plates have been patented, the latest being one due to Mr. B. J. Edwards, who makes use of a cooling chamber through which the plates are carried by an endless web or band. He also makes use of an adjustable scraper for transmitting a regulated quantity of the amount of emulsion from the roller and leading it as a broad sheet to the plate. In order to give a clear idea of Mr. Edwards' machine it is best to quote from his specification:

My invention relates to an improved

method of, and apparatus for, rapidly applying an even layer or coating of gelatine emulsion to sheets of glass, metal, paper, or other surfaces, for photographic purposes. In carrying out my invention, I make use of a trough or vessel containing the emulsion, and also of a metal roller working in bearings and made to revolve in the trough which contains the emulsion with which the plates are to be coated.

The length of the roller and trough must be slightly greater than the width of the largest plate to be coated, and I fix the said roller and trough above and across a travelling band or table, which carries a continuous train of plates to be coated. In order to carry out my improved method of applying an even coating of emulsion to the surface of the plates I make a scraper, preferably of sheet metal or ebonite, of suitable length and thickness, and I fix this scraper parallel to the roller so as to turn on pins or centres at, or near, the lower edge, and by means of a lever, weight, or springs, the upper edge of the scraper is made to press against the roller which revolves in the trough, and I make the scraper of a convenient shape and width, and fix it at any suitable angle so that the lower edge rests upon, or nearly in contact with, the surface of the plates or paper to be coated.

When the roller is made to revolve in the emulsion, the solution which adheres to the surface of the roller is taken off by the upper edge of the scraper toward which the roller revolves; the emulsion then flows down the scraper to the surface of the plates which are carried by the travelling band below; by this means the plates are coated with an even layer of emulsion, the thickness of the coating being regulated by the relative speeds of the roller and the travelling band which carries the plates. In order to coat plates of various sizes I make the above described scraper removable, and, when required, I replace it by another similar scraper of the length required to correspond with the width of the plates to be coated. In order to admit of coating plates of different degrees of thickness, I make the centres or pins at the low-

er edge of the scraper to work in bearings fixed to a movable frame or pair of side rods pivoted or hinged at one end, and carrying at the other end a roller or guide which rests upon the surface of the plates as they pass beneath the scraper; by this means the frame or rods carrying the scraper rises and falls in proportion to the thickness of the plates, which are thus allowed to pass under the scraper without obstruction; sometimes I attach the scraper to the side of the trough, and support the trough itself with the scraper attached by means of pivots or bearings upon the movable frame, or side rods before described. In order to facilitate the cooling or setting of the emulsion after it has been spread upon the surface of the plates, I cause the travelling band carrying the plates to pass over a table or slab artificially cooled by being kept partially immersed in ice-water or other cooling substance contained in a metal tray within which the slab rests, and I cover the table or slab with a metal tank containing ice or other cooling substance; the tank is supported so that the under side is only a short distance above the slab, thus forming of the space between the slab and the under side of the tank or cover a cooling chamber or tunnel, through which the plates pass. The cover or tank also serves to protect the plates from light and dust after they have been coated with emulsion; by the above described means the emulsion is rapidly set, and the plates are very quickly ready to be removed from the travelling band and placed in racks to dry.

In practice I prefer to make the travelling band in two separate portions of unequal length; that is, I make two endless bands to travel in the same direction. One of these bands, which I call the coating band, is used only to carry the plate under the trough and scraper; the plates then pass on to the other band, which I call the setting band, and which carries the plates over the cold slab and through the cooling chamber before described. Each of the above-mentioned bands work over a pair of rollers or drums fitted at one end with a driving pulley, by means of which the band

is made to travel in the required direction, the setting or cooling band being made to travel at a slightly greater speed than the coating band, in order to cause the plates to separate from each other as they pass into the cooling chamber.

For the purpose of cleaning the back or under surface of the plates, and removing any emulsion which may have been spilled on to the coating band, I make another endless band of rubber cloth passing over a pair of rollers of suitable diameter, and I fix one of these rollers so that the cleaning band just touches the coating band and the under side of the plates after they are coated, and I arrange the other roller, which is driven by a pulley, so that it revolves in and carries the endless band through a trough of warm water; by this means the back or under surface of the plates is cleaned, and the travelling bands which carry the plates are kept clean and free from emulsion.

For coating paper with gelatine emulsion for photographic purposes I use my improved machinery and apparatus substantially as above described, and in a similar manner, with the exception that I dispense with the cleaning band and one of the rollers, and I use the other roller and the trough for the purpose of wetting or dampening the paper previous to its being coated, and I use another roller or squeegee for the purpose of removing the excess of moisture and causing the paper to adhere to the coating band before being passed under the trough and scraper; the paper when coated passes through the cooling chamber, after which it is cut into convenient lengths and hung up to dry. In this manner a continuous length of paper can be uniformly coated with a layer of gelatine emulsion of any desired thickness. In using my improved machinery for coating plates or paper I actuate the rollers and bands by means of pulleys of suitable diameters to give the speed required, and driven by a gas engine or other suitable motor.

The endless bands may be made of india-rubber cloth or other suitable flexible material; but I prefer to make the band

which passes through the cooling chamber of woven wire or thin metal plate, in order to cool or set the emulsion as rapidly as possible. Sometimes instead of ice, as above described, I use a current of cold air or vapor for the purpose of setting the emulsion on the plates or paper in the cooling chamber; in any case, this chamber or tunnel must be of sufficient length to allow of the film of emulsion being perfectly set or stiffened before the removal of the plates or paper from the band; the length required will depend greatly on the speed at which the machinery is driven. With a moderate speed I find fifteen feet a convenient length for the refrigerating chamber or tunnel. By means of my improved machinery and appliances as above described, photographic plates or paper may be prepared or coated with gelatine or other sensitive emulsion with greater rapidity, certainty, and uniformity than has hitherto been practicable by any other method.

The following drawing sufficiently indicates the parts of the machine and their action. (See next page).

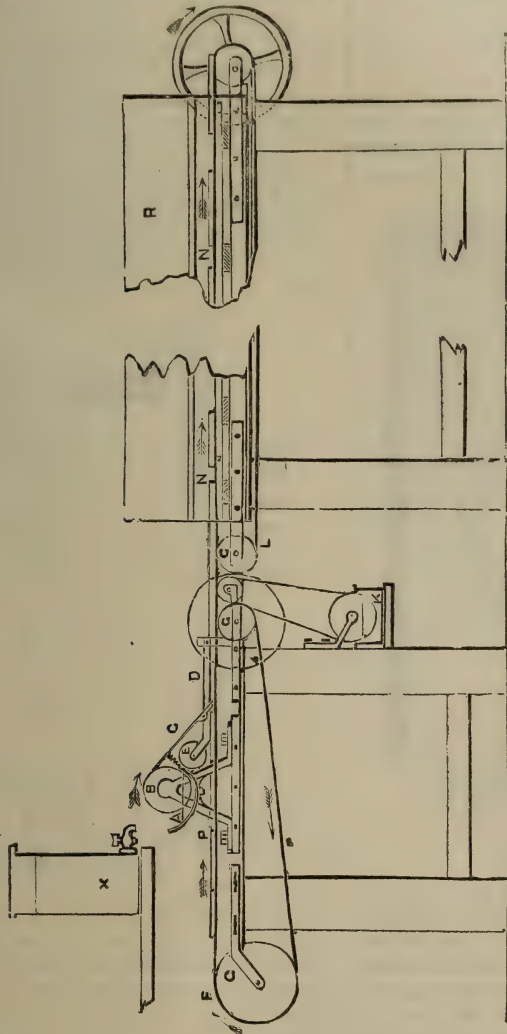
Gelatino-bromide Plates Adapted for Stripping.—The difficulty and uncertainty of stripping the film from a gelatino-bromide plate has long been a source of trouble to those working photo-mechanical processes, and until Mr. Plener introduced his method of using hydrofluoric acid for the purpose of loosening the film, there was no certain method known by which any existing negative could be satisfactorily dealt with. Recently M. Werth of Frankfort has pointed out the advantage of specially making plates adapted for stripping, when reversed negatives are required. The glass plates are first well rubbed over with French chalk and the excess is carefully wiped off. In the next place they are collodionized with a plain collodion, after which they are coated with emulsion in the usual way. In order to strip the film from a negative taken on such a plate, the negative is set with the film upward in a horizontal position and sufficient of the following composition to form a layer about a sixteenth of an inch thick is poured on.

Gelatine, 60 parts,
 Water, 220 "
 Glycerine, 10 "

The composition having become dry, the

point of a pen-knife is run underneath the film all round the edge, and it can then be detached with ease.

Adjustable Standard Diaphragms.—The



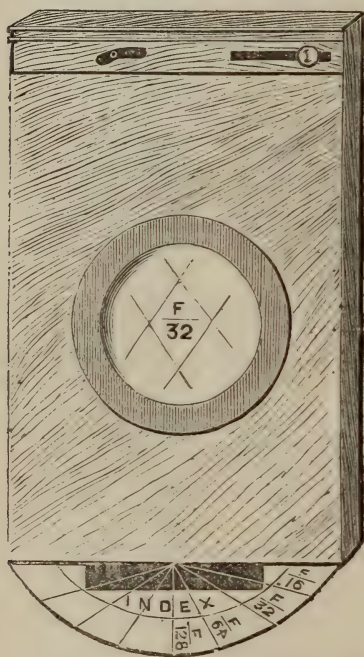
A is the trough containing the emulsion ; B is the roller ; C is the guiding roller ; D is the pivoted frame which carries the scraper and sometimes the trough ; E is the travelling band for coating ; G G are rollers carrying the travelling bands ; H H are similar rollers to carry the endless band for cleaning the plates ; J is the cleaning band ; K is the trough containing water for cleaning or washing the band ; L L is the travelling band carrying the plates through the cooling chamber ; M is the cooling chamber or tunnel closed at the sides and open at each end ; N is the cold slab over which the travelling band passes ; O is the metal tray in which the slab rests ; P are the plates, before and after being coated ; R is the metal tank or cover over the cooling chamber ; S is the spring which presses the scraper against the roller ; X is a reservoir of emulsion for replenishing the trough.

photographic societies' standard diaphragms are coming into pretty general use in England, the convenience of having them so numbered that the similarly marked diaphragms of all the lenses used involve the same exposure being very great. Your readers will remember that the standard

No. 1 diaphragm has an aperture equal to one-fourth the equivalent focal length of the lens, while others of the series are so numbered that the numbers express the exposures required in terms of No. 1. Thus No. 4 has an area equal to one-fourth of No. 1 and requires an exposure four times

as long. In order to meet the want of a universal adjustable stop, Mr. Cowan has devised an arrangement by which a stop of any aperture in relation to a lens of given focus can be immediately produced. The stops thus made are, however, square; but this is a matter of no import in actual practice.

Mr. Cowan's consists of two diamond-shaped openings in plates of ebonite made to pass each other so as to gradually diminish the aperture until it is completely covered.



The position is on the camera front, half the combination being screwed into a flange in front, and the other half at the back, so that the stops may work between the lenses. Below is an index plate, around which is marked a scale of standard stops for all the focal lengths of lenses with which it can be used. Starting at full aperture, by means of a trigger having a cam action, operating to raise one shutter whilst lowering the other, a given mark in the index is reached corresponding to (say) f_{32} ; a clamping screw then secures the shutters in that posi-

tion, or rather prevents a larger aperture being employed when the exposure takes place; the exposure being made by causing a button suitably fixed to traverse in a slot as shown in the accompanying figure.

A Substitute for the Dark Slide.—Mr. Sturrock, of Forfar, has obtained a patent for an arrangement for introducing sensitive plates into the camera, consisting of a cell or box open at one end and large enough to contain the plate, and an open projection to match it at the back of the camera, these being connected by a tube or bag of some flexible material, which can be doubled over as shown in the diagram to exclude the light.



Mr. Sturrock says in his specification: I make at the back of the camera a space to hold a sensitized plate; this space is open above, and is provided with a flange or other similar device, to which can be readily attached by an elastic band or other convenient means the open mouth of a bag made of paper, cloth, india-rubber, or other suitable material impervious to light; or it may be made of tin, cardboard, or rigid substance, with a flexible neck or mouth of rubber or cloth suitable for attachment to the camera. I fill the bag in a dark place with a sensitized plate, and then close or fold the mouth to exclude the light, and secure it by a spring, clip, elastic band, gum, or their equivalents; and having fixed its

mouth to the camera, as already described, I remove or undo the fastening, invert the bag, and deposit the sensitized plate in the camera. After exposure, the plate is again slipped from the camera into the bag, and the fastening again put on, and the bag, with the plate, removed from the camera, when another bag containing a plate can be attached. The plates can be stored away in the bags both before and after the exposure.

Several years ago I used an arrangement of this kind as a makeshift with the detective camera, and found it useful, but think it difficult to suppose that anyone should make a permanent apparatus on this principle.

The Action of Heat on Gelatino-bromide Plates.—Herr Schumann has made some interesting observations regarding the action of heat on gelatino-bromide plates, and his results generally confirm the observations of Abney, but he finds a permanent increase of sensitiveness on a plate that has been heated to 110° centigrade and cooled before exposure; still this grain in sensitiveness was very much less than in the case of a plate exposed hot.

The Dull Season.—As regards photographic experiment we are now at the dull season, our most active talkers and workers being away either with or without the camera, but in a little over three weeks' time the session for active photographic work will commence with the opening of the London Photographic Exhibition and the commencement of the sessions of the society.

The Excursion to Mauch Chunk.

THE excursion of the Society of Amateur Photographers to Mauch Chunk, which was put down for the 10th of September, was partially abandoned owing to the extreme heat. This prevented a large number from going who had signified their intention to do so. The party which braved the heat, though small, was an exceedingly jolly one and included a number of ladies. Among those present were Mr. E. B. Barker, Mr. J. B. Gardner, Mr. H.

N. Tiemann, Mr. W. E. Partridge, Mr. Frank G. Du Bois, Mr. Lincoln Adams and Mr. W. C. Cullen.

Mauch Chunk was reached a little ahead of time, and the larger number of the party devoted an hour to a dinner at the American House. Several of the members, however, succeeded in making a number of exposures on the way from the depot to the hotel, and a few enthusiastic ones improved the hour of noon by taking views near the river. As usual the ride over the Switchback was the source of unalloyed enjoyment, and one of the gentlemen with a detective camera secured a number of characteristic scenes on the way. In fact the cameras were kept actively employed from the time the train left Jersey City until it reached its destination, every stoppage being improved by some one. One or two attempts were made to get views from the train while in motion, but these were not successful, owing to the shutters hardly being up to such rapid work. In the Glen and on the picnic grounds a number of views were taken, including several groups. Mr. Barker and Mr. Cullen both took views of the party, which were highly successful, and also secured some fine negatives in the Glen.

Of all the excursions which the amateur photographer can take in the vicinity of New York, that to Mauch Chunk is probably the most satisfactory. It is hardly necessary to speak of the disadvantages which the Hudson, Coney Island and the various East River resorts present to the amateur; most of them are known by experience.

The trip to Mauch Chunk by the Lehigh Valley Road presents the advantage of beautiful scenery all along the way, and at several stations the regular stoppages are sufficient to enable the amateur to take a view from the window of the car or the station platform.

With Mauch Chunk, the Switchback and Glen Onoko everyone is familiar in a sort of general way, and numberless photographs have been taken which ostensibly show their most charming features. To the artist who walks through the town, passes over the Switchback, and climbs to the top of the Glen, it seems as though the best views had entirely escaped notice. A few weeks ago we searched in vain for views of places in the town itself, which we deemed most picturesque and delightful. Views from the top of the hill embracing a wide extent can be obtained, but the "little bits," as the painters call them, have

been left almost entirely alone. To the amateur who can spend two or three days on the trip, we would suggest taking his camera along the Main street of Mauch Chunk and getting views of the vine-covered terraces which can be seen between the houses. There are certainly thirty or forty points within a quarter of a mile of the American House which are well worth preservation. Along the river and at the depot there are many more views which with a landscape, or a long-focussed, lens make charming subjects. The wide angle lenses are not so much needed for distant views, as they take in too much and destroy the effect. A view from the top of Mount Pisgah, or from Bear Mountain, should certainly be an upright, rather than horizontal, as the upright form gives an idea of elevation, while the horizontal picture tends to flatten the mountains. Near the locks the drop shutter can be used, and many views of boats, animals and men obtained which are entirely out of the common line. If he has the good fortune to obtain access to the bank next the American House he can get a series of hillside and terrace views which are altogether unique. The time for most of these views is the early morning; later in the day the light changes entirely. At Glen Onoko on the excursion days little difficulty will be experienced by the amateur in finding charming groups of children. The officers of the road who have the place in charge, as well as those managing the excursions, welcome the photographer to every part of the Glen. In the lower portion the rock work and fallen trees present the best subjects, and should be taken as early as possible. Near the upper part there are three very beautiful waterfalls which this season are unusually fine. In the glen very long exposures should be given, as the shade is deep. After reaching the top of the hill a five or ten minutes' walk brings one to Point Lookout, where a grand view can be had.

The Glen and the ride over the Switchback will occupy the whole day. If the excursionist stays over, he can very pleasantly spend the first day on the Switchback. There are many beautiful things to be had just below the Summit Hill depot in the way of laborers' houses covered with vines, etc., and there are many charming points on the way back near Mauch Chunk. The second day should be devoted to Glen Onoko, where the light is best in the early morning. The rocks opposite the Glen depot are finest in the afternoon, when in

strong shadow. Groups on the picnic grounds can best be managed in the morning and toward noon. If the excursionist can spend the time to stop on the way back he will find ample work for his camera.

An Unexpected Development.

MRS. J. H. FITZGIBBON, widow of the late photographer of that name, was married last evening (10th), at 8 o'clock, to Mr. Clark, of Washington, Ga., who has recently disposed of his business in that city to make his home in St. Louis. Yesterday's wedding was the consummation of a romantic attachment which originated several months ago in a brisk correspondence, both parties having mutual friends, and there was only a brief meeting of fifteen minutes until the wedding day.

A small circle of friends assembled last evening to witness the ceremony, which was performed by the Rev. Dr. Berkley, of Kirkwood, according to the rites of the Episcopal Church, at Mrs. Fitzgibbon's residence, 2334 Olive. The bride wore an elegant costume of Tyrian purple satin rhadames, made dancing length, with tablier front and revers of satin brocade on a lighter shade with apricots. The corsage was made with full shirred vest of the brocade, and finished by a point-lace collar and cuffs, the lace at the throat fastened by a diamond pin and a cluster of Niphetos roses and star jessamine. Maj. and Mrs. Gilson stood on either side of the happy couple, Mrs. Gilson wearing a wood-colored brocade satin, trimmed with oriental lace, over a petticoat of bronze satin. After the ceremony a handsome supper was served by Beers, the large bride's cake, crowned with bridal blossoms, adorning the head of the table.

Mr. and Mrs. Clark will not go on a bridal tour, but will remain quietly at their home on Olive street.—*St. Louis Globe Democrat.*

DRY plates have been frilling lately in England.

The Cincinnati Convention.

MANY men, many minds. Some people have a genius for one thing, and some a propensity for another. If everyone thought and acted alike there would be little room for improvement and fewer opportunities for criticism. But the late Convention at Cincinnati, if it had no other merit, has certainly developed an unlooked-for activity in the latter respect, which is very reassuring.

It is an old Chinese custom, we have heard, that if anyone publicly condemns the performances of others, he shall immediately assume the role and establish the justice of his charge. What a pity all those who were impelled to censure could not be accommodated on the Chinese plan.

The ability to conduct the deliberations of an assembly according to strict parliamentary rules is only acquired by much experience, and is not by any means instinctive. As long as the desired result is arrived at, and is satisfactory to the persons directly concerned, the method of procedure is merely a secondary question. We can trust to the good sense of the great mass of photographers, who are everywhere becoming more independent and self-reliant through their relief from the leading-strings by which they were formerly unconsciously guided, for any improvement in this regard that may be absolutely necessary; and we see distinctly in the proceedings of the late Convention evidence of such improvement.

Only a portion of the latter part of the proceedings were a little tumultuous, while the whole of the earlier part was conducted in good order. We can easily forgive a little irregularity in one direction, while recognizing the ability of, and value of the addresses made by, President Kent, Mr. Ryder and others.

In a letter containing strictures upon the late Photographic Convention, Prof. Garrison attributes to trade interests on the part of the officials the failure of Mr. Henderson to get a hearing before the Convention on the subject of making gelatine emulsions. We have received from Mr.

Eastman, with whom the late President has *always* had extremely friendly relations, a letter, in which he says, as to the suggestion that Mr. Kent had an interest in a dry plate manufactory, "undoubtedly referring to mine, nothing could be more incorrect; Mr. Kent has no interest in our factory whatever."

If any of the other dry plate makers, who endeavored apparently to get a *quasi* indorsement of the Convention for their plates by having a series of prizes awarded, to be paid out of their own pockets, for excellence of work, had a hand in this matter, we know not. It is for them to relieve themselves of the imputation of having used the Convention illegitimately for trade purposes. This abuse we have always protested against, and were in hopes that with the advent of the new control such practices would have become a thing of the past. We do not presume for a moment that the officers lent any hand to the cause of the complaint.—EDITOR.

Extraordinary Pictures.

We have to acknowledge the receipt of three extraordinary samples of photography by our friend H. McMichael, the well known and justly esteemed photographer of Buffalo.

They are remarkable samples of excellence in posing, lighting and grouping, but the most astonishing is not marvellous feature of these pictures—two 16 x 18 head and busts, and a 16 x 18 group of three—is the fact that they were made with a Dallmeyer Rapid Rectilinear lens, listed to cover only a 5 x 6 portrait. The two heads were made with the second largest stop inside of twenty seconds, and the group with the full opening in about twelve seconds. The cutting power and non-distorting character of the Dallmeyer lens is here strikingly exemplified.

Mr. McMichael will be on hand at the next convention at Buffalo, not only as the resident Secretary of the Association, but as an exhibitor of pictures second to none.

Photography at the New Orleans Exposition.

IN all the notices of the late Photographic Convention, the names of the Committee appointed to represent them in connection with the future New Orleans Exposition, that of Mr. W. I. Adams was omitted. If we had received a copy of the official report (which has not yet reached us in full), we should have had no occasion to refer to this matter. Being informed, however, by Mr. E. L. Wilson that the name of Mr. Adams was included in the committee, we hasten to make this explanation and to express our regret that the document from which our report was printed fell into this omission.

PHILADELPHIA, PA., Sept. 10, 1884.

MESSRS. ANTHONY & CO.,

Publishers PHOTO. BULLETIN.

Gentlemen: In your report of the proceedings of the Cincinnati Convention you omitted the name of Mr. W. Irving Adams, as a member of the committee appointed to see that our art was properly represented at the New Orleans Exposition. I know that the daily papers and the official reporters made the same omissions, the one following the other. But I wrote and read from manuscript, which I still have, the resolution and the names of the committee, which I asked to be appointed, and the name of Mr. Adams appears third on the list.

Please, therefore, not only make this correction, but urge your readers to respond to the invitation of the committee, which they will shortly receive. Yours truly,

EDWARD L. WILSON, *Chairman*.

We hope the last desire expressed by Mr. Wilson will be responded to by all concerned, in order that photography will be fully, completely and honorably represented.—ED. BULLETIN.

THE Magyars are to have a photographic monthly in their own tongue. A Mr. F. Veresez, of Klausenburg, will be the editor.

SENECA FALLS, N. Y., Aug. 29, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: I have just received my "BULLETIN," and in looking over the report of the committee on the Cramer award I see I am left out entirely. I enclose the report of the committee, and only add that the pictures were taken from our regular custom work, and that we have the prize (\$200) in cash, so there is no question with regard to that. Hoping you will correct the matter, I am, very truly,

J. E. HALE.

For first prize for best collection of cabinets and other sizes below 11 x 14, J. E. Hale, Seneca Falls, New York.

We regret the omission, but Mr. Hale's exhibit was not embodied in the list from which our report was gathered.

Messrs. Buchanan, Smedley & Bromley, the go-ahead young Philadelphians, also made a very fine exhibit, including excellent examples by the Willis & Clements platinum process, which attracted more than ordinary attention and deserved special mention. They also exhibited the Service Shutter.

In our next, we hope to enumerate the remainder of the photographic exhibits, for which we have not the space now.

TRY Anthony's New Transparency Plates.

WE had the pleasure of a visit recently from Mr. E. W. Fell, of Cleveland, the inventor or discoverer of a new method of using electricity, *i. e.*, in connection with making prints from negatives. We have noticed this discovery heretofore in our columns, but we had not until yesterday seen any print made by the method; these consisted entirely of wood-cuts or impressions on wood, which were exquisitely done. Mr. Fell assures us that he can make prints from the negative upon any surface, metallic or other, but gave no explanation of the *modus operandi*. He is about making arrangements for its industrial development and use.

EDITOR.

The Photographers' Association of America.

ANNUAL report of W. A. Armstrong, Treasurer of the Photographers' Association of America:

RECEIPTS—1883.

Oct. 24, cash from J. H. Reid, . . \$497 30
 Nov. 1, cash from C. A. Schindler, . . 10 00
 1884.

June 12, cash from A. M. Collins & Son, 100 00

June 12, cash from E. & H. T. Anthony & Co., 100 00

Aug. 1, cash from—

Scovill Mfg Co., N. Y. City, . . 100 00

W. F. Ashe, 25 00

Lehman & Brown, 25 00

Mr. Scofield, Utica, N. Y., . . 10 00

S. Wing, Charleston, Mass., . . 10 00

Benjamin French & Co., Boston, . . 50 00

C. M. French, Garrettsville, O., . . 10 00

Mr. Cope, Hamilton, O., . . . 10 00

Toledo Moulding Co., Toledo, . . 25 00

E. C. Gilbert, Ravenna, O., . . . 5 00

P. Smith & Co., Cincinnati, O., . . 50 00

Mr. Grayback, La Porte, Ind., . . 25 00

J. M. Bryant, La Porte, Ind., . . 25 00

Allen Bros., Detroit, Mich., . . 25 00

Rockford D. P. Co., Rockford, Ill., . . 50 00

N. C. Thayer & Co., Chicago, Ill., . . 25 00

Douglass, Thompson & Co., Chicago, . . 25 00

Mallinckrodt & Co., St. Louis, Mo., 25 00

St. Louis D. P. Co., St. Louis, . . 25 00

A. L. Seward, 5 00

Devoe & Co., 25 00

Extra collections (by Secretary), . . 845 00

Dues from members, 1,553 00

For lumber and screens, 70 00

Sept. 1, cash from C. A. Schindler, . . 15 00

Hoboken, N. J. 2 00

Sept. 8, cash from membership dues, . . 2 00

Total, \$3,792 30

EXPENDITURES—1884.

April 16, paid J. H. Kent for Secretary, \$200 00

Expenses of Executive Committee called to Cincinnati in April, . . 131 98

April 30, paid for blank books, . . . 1 75

Aug. 1, paid—

Mr. Bonte's carpenter bill, . . . 400 00

For sign, 15 00

Mr. Cady, 100 00

For badges, 200 00

For clerks, 20 00

For printing posters, 40 00

L. Weingartner, (clean'g building), . . 22 50

(Bills audited at Cincinnati)

Paid L. Weingartner—

Five per cent of receipts, . . . 188 87

Music, 90 00

Plants, 10 00

Muslin for decorations, 25 00

Gas bill, 17 00

Rent of hall, 500 00

Stamps, telegraphing, stationery, and E. Klauber's expenses on

committee's call, 125 00

Rent of awning, 40 00

Reporting proceedings, 175 00

Paid draft on New York, 1 35

Paid exchange on draft, 50

Paid C. Gentile, advertising, . . . 40 00

Paid J. F. Ryder, advertising, . . . 6 50

Paid on President's and Secretary's vouchers, 661 75

Paid W. A. Armstrong 5 per cent. of receipts, 188 76

\$3,200 86

To balance in bank, 591 44

\$3,792 30

The New Eastman Process

THE advantage of the new and instantaneous process which is now being used by one of our popular *photographic firms* is fully exemplified by the following demonstration:

Mr. I. H. Stoddard (firm of Bundy & Stoddard, 320 Chapel St.,) made one hundred negatives of one hundred persons in three days. Not one of the negatives was developed until the last one of the hundred plates had been exposed. Ninety out of the lot were ordered from without a resitting; five out of the ten persons who had resittings ordered from the first negative.

We don't know whether to attribute the phenomenal success of Mr. Stoddard to the superiority of the *new process*, or to the superior skill of the artist, but we are inclined to the latter opinion.—*Pilot*.

Photography in Chicago is dead. And Mrs. Fitzgibbon is no more Mrs. Fitzgibbon.

CORRESPONDENCE.

N. Y., Sept. 15, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Dear Sirs: The new Anthony Transparency plates given me for trial afforded very excellent results. The transparencies I have on them are as beautiful as anything I have seen.

Respectfully,

H. J. NEWTON.

WINSTON, N. C., Aug. 15, 1884.

E. & H. T. ANTHONY & CO.

Gents: I have still on hand ———, also ———'s dry plates, but they will not begin to compare with the Eastman Specials I got from you. I am getting more customers for the Eastman plates; had a call yesterday by a St. Louis photographer. I showed him negatives and prints from ———'s, ———'s, and Eastman Specials. He was astonished at the difference, and says when he works up what plates he has on hand he will use Eastman's exclusively, so will I. Very truly yours.

I. S. BROADAWAY.

J. NEW YORK, INMAN S. S. CO.,
PIER 36, N. R., Aug. 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: I have given the Pearl Paste that you sent me a thorough trial, and find it just what amateurs and professional photographers have for a long time wanted. It contains no grit, and it will not mould nor get sour when opened; but it will stick (and you can bet on that). If you will give it a trial you will be pleased with it. Anyone can use it for all sticking purposes that paste is used for; and now is the time to have a jar in the house to put up preserves with, for I have just done some with it. Respectfully yours, etc.,

E. MILLS, *Amateur*.

NEW YORK CITY, Sept. 13, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: Please send me at once, to the above address, six dozen more of your

$3\frac{1}{4} \times 4\frac{1}{4}$ transparency plates. I cannot conceive of anything more satisfactory than I have found them in every particular, whether when making positives for the lantern or negatives, where a prolonged exposure was practicable; these new plates of yours being, for their purpose, "*the best*" I have ever found—they are (like Eastman's Special plate for instantaneous work), "good enough for me."

Very truly yours,

JAMES BETTS METCALF.

WILLETS POINT, Sept. 21, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Dear Sirs: Having used several dozen of your new Transparency dry plates with uniformly good success, I take pleasure in testifying to their general excellence, which for transparency work places them in my opinion at the head of the list. For lantern slides particularly, I think them just *the* plates, on account of both the fine color of the deposit and their entire freedom from that peculiar ground glass effect which is to some extent noticeable in every brand of plates I have used, and which so seriously impairs the brilliancy of the projected enlargement. Yours sincerely,

VON SOTHEN.

SOCORRO, N. M., July 21, 1884.

MESSRS. ANTHONY.

Dear Sirs: Please inquire for a collection of odds and ends from New Mexico, sent for exhibition at Cincinnati, possibly the only exhibit from this section, and that from an amateur who takes enough interest to send something that may be amusing or curious to Eastern photographers.

They were made with Eastman plates and Dallmeyer lenses; are not exhibited as *pictures*, but as an amateur's effort to contribute something interesting.

Yours truly,

G. M. SHAW.

The pictures were quite interesting.

WATERTOWN, N. Y., July 31, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: Coming to examine and study out the way to arrange the camera and camera stand, I am well pleased with them and their mode of working. You have arranged it quite satisfactorily for making cards, cabinets and larger sizes. Your plate-holder cannot be beaten for beauty, facility of working and finish. Goods arrived in good shape and well done.

Now send the 6 D Dallmeyer and I am ready for the boys.

Respectfully,

W. E. HART.

WILLETS POINT, June 11, 1884.

MESSRS. ANTHONY & CO.

Dear Sirs: Having had occasion to inspect one of your Detective Cameras, I think that the instrument might be successfully applied to various military purposes, as field reconnoissance and for surreptitious sketches of hostile works and positions. In order to ascertain its general usefulness in this direction, I would request that you send me as soon as possible one complete camera, together with one dozen of *Special* plates.

Yours,

VON SOTHEN.

PEEKSKILL, Aug. 7, 1884.

MY DEAR MCGEORGE.

Beg pardon for not answering before. To tell the truth I could'nt very well write up an article in answer to "Troubled," but I'll take exceptions. He says that he has not been able to get those grey and blue tones so much admired, etc. They are generally a specialty with some photos. for a purpose, and are done by strong fuming and long toning. They are decidedly bad for landscape photography. Again, he does not say who-e or what toning salts or bath he uses, a very essential point to answer. "Neutrality," of course, would follow with any soda or borate, and even alkalinity. Then the negatives are the *best*, it may be,

to look at, but not to print from, "chock full of detail," as some of them have it, but *devoid of contrast*.

Let him, as all intelligent photographers or amateurs would do, prepare his paper fresh every time he prints, fume it right, print it deep enough to stand the deep toning he wants to give it, take any practical printer's formula for silver solution, washing, toning and fixing, and print carefully, rich, strong, and intelligently. For views and foliage tone warm, that is, slightly red; for portraits purple, and fix slowly.

He reverses the order; he says cool tones for views. This is manifestly *wrong*. Leave them warm or *brown*.

Respectfully,

A. H. ATWOOD.

Our Illustration.

THROUGH the kindness of Mr. Antonio Moreno, of this city, whose place of business is at No. 4 E. Fourteenth Street, we have the opportunity of affording our readers a pleasant change. The cloud portrait in the present number is a novelty of Mr. Moreno's invention, and has already been described in these pages. The mode of producing them consists of delicately painted clouds on large sheets of plate glass, placed in *front* of the sitter, through an opening of which the subject is photographed in the ordinary way. The plates used were Eastman's Special, and the paper, the N. P. A. Pensé extra brilliant. The negatives and prints were both made by Mr. Moreno.

Another Bouncing Beauty.

THE enterprise of our Chicago friends is unparalleled. This time it is from Mr. C. F. Rice, 192 pages—big ones—of everything useful and ornamental for the household. Besides mirrors, frames, brackets, etc., there are albums, artotypes, picture cord, nails, easels, velvet and plush frames, paintings, photographs, plaques, racks, stereoscopes and views, graphoscopes, steel engravings, transparencies, and goodness knows what. You ought to have his catalogue.

Pictures Received.

FROM Messrs. Douglass, Thompson & Co. we are in receipt of a fine 18 x 22 print of the new Rush Street Bridge across the Chicago River. This is thought to be the largest bridge of its kind yet built, and it swings by steam power. The artistic rendering is very pleasing. The negative was made by Mr. A. D. Edgeworth. It has been mounted, and any one desiring to do so may see it.

From Mr. Fred Robinson, of Trumansburg, N. Y., a nice cabinet of a child. The little fellow is munching a banana, and enjoying it hugely. It shows what can be done with the Eastman dry plate.

Also several cabinets from E. M. Collins, of Owego, N. Y., including portraits of children and adults.

From Mr. D. Clark, of New Brunswick, quite a novelty, consisting of a neat and tastily gotten up 4 page pearl-tinted cardboard circular, on the first page of which is mounted a beautiful child's portrait, made on Eastman's Special plate. Evidently Mr. Clark intends to "push things."

A very excellent group of the Fifth Annual Convention of the Photographic Association of America, made on July 29th by Mr. Wilfred A. French, son of Benj. French of Boston, has just reached us. The faces are nearly all recognizable, and many of them are really fine portraits in miniature.

Facts and Fancies.

MESSRS. SMITH & PATTISON are out with circulars of more novelties, and will gladly mail them to all applicants.

The Western photos. have had a good time at a state penitentiary, and say there's a chance, and that that is the place, to be *Joli-et.*

A fitting recognition of the character and ability of the late Mr. Jabez Hughes, was the transmission of a message of sympathy from Her Majesty to his family, and a wreath for his bier.

The Fifty-third annual exhibition of the American Institute Fair was announced to open on the 24th of this month (Sept). The entrance fee is as formerly \$10 00, with right of admission to the exhibitor and an employé.

At the recent meeting of the Society of Amateur Photographers in this city Mr. Henderson alluded to the fact that the salts of ammonia, not being *stable* salts, he preferred for his use the salts of potassium, etc., whereupon one in the audience rose in response to an invitation to ask for explanation, and begged to know if the lecturer had been misunderstood, for the speaker imagined they were purely such. Mr. Henderson was naturally surprised to hear his interrogator propound such a simple question, and proceeded to explain; but on mention of the original Egyptian article—the camel dung of Jupiter Ammon—the gist if not the jest of the argument became ludicrously apparent, and the merry laugh went round.

Death of Mr. Stoddard.

It will be a surprise to the large number of acquaintances of Dr. William H. P. Stoddard to learn that he died at the residence of Dr. Hallock, on Upper Water Street, last evening, Aug. 30, at 7 o'clock. He had been suffering from gastric fever for some days, but was not thought seriously ill until the last two or three days. He was born in New York City, and like many other young men came West. He was, we believe, in California when the gold fever was high. He returned to this city from there, where he has resided ever since and endeared himself to a large number of friends by his fair dealing and whole-souled genial life. He was a brother of Mrs. Dr. Hallock. Many will miss Dr. Stoddard.—*Evansville Ind. Journal.*

Dr. Stoddard was one of our oldest and most esteemed friends and customers, and the announcement of his death fell upon us with a shock for which we were altogether unprepared. As a man and a gentleman Dr. S. had no superior.

ANTHONY'S PHOTOGRAPHIC BULLETIN

FOR OCTOBER, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

Page, for a single issue,	\$15
Half page, " "	8
Quarter page, " "	5
Eighth page, " "	3
Special Notices, per line,	25 Cents.

Anthony's
Photographic Bulletin,
ILLUSTRATED.

Terms for 1884: Two Dollars.

Unillustrated, One Dollar.

*Payable in Advance,
And only to those who pay.*

VOL. XV.—31.

H. T. Anthony.

In Memoriam.

DEAD! There is an universal enemy—we call it Death. The fragrant flower, the sturdy oak, the animalcule and the worlds decay. And man? He cannot die!

What is man? A gifted poet has said—

"In me is matter's last gradation lost!"

Let us rise for a moment to the sublimity of this beautiful thought. The baser matter never perishes, except in transmutation; why man, its last, supreme gradation?

There are occasions when human life is shrouded in solemnity, and this is one of them. Standing in the presence of the dead we are lifted by an unseen power, and the futility of all mere human hope is manifested.

Silent in the cold grave all that was mortal rests, rests in peace; and nothing is left to us save memory. A form so lately visible has disappeared forever, and reached that bourne from whence no traveller returns. But the kindly spirit, the firm, just character of the departed will never die.

Suddenly, unexpectedly, the end came. Henry T. Anthony, one of the senior members of our firm, has been stricken from our side. But a day or two ago he returned from Richfield Springs, where he had spent a few short weeks in much needed rest, filled with animation and desire to resume his former activity. The manner of his death was peculiarly sad.

In crossing a crowded thoroughfare he was caught between passing vehicles and thrown to the pavement. He was carried to a pharmacy and from thence to a hospital, where his identity was at once discovered and consciousness partially restored. But the shock was too great for his enfeebled frame, and paralysis quickly intervened; then no medical skill could avail, and he passed peacefully away in his own apartments at 108 Lexington Avenue, in this city.

Singularly on the very day he sustained his injuries the *British Journal of Photography* for Sept. 26 arrived from England, containing his portrait and a biographical sketch, and he had the pleasure of seeing for himself the kind and generous words spoken of him abroad—and truthfully, as those who knew him best are witnesses. He deserved them all and more. Sensitive and retiring by nature, he never sought that eminence to which his talents and achievements entitled him. A man of broad culture, and intensely intellectual, he delighted in such things as lay beyond the common ken; and his perspicacity was remarkable. A rapid and inveterate reader, one bare glance sufficed to reveal to him the essence of the writer's meaning, and difficult problems were as an open page. Rarely in a single mind are blended so many divergent powers, or such mental harmony. In its analysis and synthesis were happily combined; cause, analogy and invention ran hand in hand.

But aside from these rare gifts, Mr. Anthony was the fortunate possessor of one crowning virtue—integrity. It may be traced in every line that he has written and every lineament of his features. Sincerity was the keystone of his being, and its deficiency in others was his greatest trial. He was considerate for all else, but that he could never brook.

Cosmopolitan in taste, he respected all and accorded each his rightful due; but few had a purer patriotism. Shams were his abomination, and seldom was he deceived by them. His trust in those who owned his confidence was absolute, and his intuitive judgment of character rarely failed. Benevolent to a fault, he would deprive himself for others; but his private charities will be never known, for he forbade their mention. Though seemingly at times austere, none could be more kind or more indulgent. His natural instincts were elevated and refined in high degree, and his bearing and manners unusually manly and courteous. In all his intercourse with rich or poor, humble or renowned, educated or illiterate, he was ever the same dignified gentleman. In every relation of life, as employer and friend, as brother and merchant, as the promoter of science and the trustee of a large estate, his name and fame have but one synonym—fidelity.

What his attainments were are already generally known; what he actually did in original investigation may never be.

For a year or more he had been a great sufferer, and he plainly foresaw the inevitable; but he bore his burden with singular fortitude, and calmly awaited the end.

Rich in experience, ripe in years, and honored and respected by all who knew him, he has finished his labors on earth. Many mourn his loss, and wish that he might have been spared yet another decade to enjoy the fruits of his long industry.

But it could not be. With a heart full of tenderness, and a gentle touch of nature for all mankind, he bids—

FAREWELL!

Although Mr. Anthony's strength had well nigh become exhausted, and the physical man craved rest, it was not without reluctance that he yielded to the entreaties of his friends and finally sought relief by a brief sojourn in a warmer clime. For several years with each atmospheric change he had been a prey to rheumatism in its most aggravated form, and it was hoped that the Hot Springs of Arkansas would prove beneficial. Accordingly, on Feb. 13th he was induced to undertake the fatiguing journey, and in company with Dr. R. W. Wilcox, the son of Mr. V. M. Wilcox, he safely arrived at his destination, not, however, without grave fears on the part of his physician. He remained there for a short time, when he was so far improved that he proceeded to Marietta, Ga., and frequently accompanied his companion on foot for long distances, returning to this city apparently much restored. Then many self-imposed duties and a multiplicity of cares again told upon him, and he consented to endure another respite during the heated term. At Richfield Springs he was also much benefitted, and after an interval of several weeks he ventured homeward. Proud of his recuperation he again busied himself with his many interests, and took pleasure in giving them his personal attention. But in a moment of danger the accident came, as we have seen.

The remains were removed to the home of his brother Edward, with whom he had been daily associated for so many years, and on Tuesday, the 14th inst., they were deposited in the family vault at the Marble Cemetery in Second Street, this city.

A large number of his friends attended the services, several of whom came from distant cities. Among those who assembled were persons of every rank and station. There were many faces now seldom seen. The photographers of this city and vicinity

the older ones especially, and the photographic dealers were nearly all present, and their places of business closed.

The suddenness of his death, and the irreparable nature of the loss have fallen with a severe shock on all who knew him. How he was esteemed, and why, will be plain to all who may read the following spontaneous expressions that have since reached us :

CINCINNATI, O., Oct. 13, 1884.

MR. EDWARD ANTHONY :

I condole with you most sincerely.

D. K. CADY.

BOSTON, MASS., Oct. 13, 1884.

MR. V. M. WILCOX :

We extend our heartfelt sympathy over your great bereavement at this hour.

C. H. CODMAN & CO.

PHILADELPHIA, PA., Oct. 11, 1884.

COL. V. M. WILCOX :

My warmest sympathies to Mr. E. Anthony and yourself. A great loss to our art.

EDWARD L. WILSON.

TOLEDO, OHIO, Oct. 13, 1884.

E. & H. T. ANTHONY & CO. :

We extend to you our sincere sympathy in this your great bereavement.

SESSIONS & KOHNE.

PHILADELPHIA, PA., Oct. 13, 1884.

V. M. WILCOX :

I have with deepest regret just learned of the death of H. T. Anthony. Please advise day of funeral.

J. CARBUTT.

PHILADELPHIA, PA., Oct. 13, 1884.

E. & H. T. ANTHONY & CO.

Gentlemen : We this morning learn with regret of the death of Mr. H. T. Anthony, and beg to assure you of our sympathy. We are,

Yours very truly,

WILSON, HOOD & CO.

PHILADELPHIA, Oct. 15, 1884.

E. & H. T. ANTHONY & CO.

Gentlemen : It is with great regret that we have heard of the death of Henry T. Anthony, of your firm. With warmest sympathies, I am,

Very truly yours,

THOS. H. MCCOLLIN.

WASHINGTON, D. C., Oct. 16, 1884.

MR. MCGEORGE:

I read with a feeling of sorrow of the death of H. T. Anthony. His loss is irreparable to the firm, and to his many friends a sad, sad announcement. Yours, etc.,

E. R. MYERS.

PHILADELPHIA, PA., Oct. 11, 1884.

FRIEND WILCOX:

I was very much surprised at the sad news sent in your telegram to-day. Another most useful veteran is gone, and it pushes you and I forward in the same direction.

Truly yours,

EDWARD L. WILSON.

MANAYUNK, PHILA., Oct. 16, 1884.

E. & H. T. ANTHONY & CO.

Gentlemen: I am very sorry to learn of the loss that your firm has received in the death of Mr. Anthony, who has been so long and so favorably known to the photographic trade.

Very truly yours,

W. G. ENTREKIN.

PITTSBURG, Oct. 13, 1884.

MR. E. ANTHONY.

Dear Sir: I have noticed with deep regret the death of your brother Henry in this morning's paper, and desire to convey to you my most sincere sympathy and condolence in your bereavement.

Yours truly,

B. L. H. DABBS.

BALTIMORE, Oct. 13, 1884.

MESSRS. ANTHONY & CO.;

I have just heard of the death of Mr. H. T. Anthony, which grieved and surprised me, having only a few days ago spoken to him in apparent health. Accept my sympathy.

Yours truly,

DANIEL BENDANN.

BALTIMORE, Oct. 14, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: Please accept our condolences on the death of Mr. H. T. Anthony. While we have been in honest antagonism on certain questions with your firm, we wish to express our appreciation of the personal worth of Mr. H. T. Anthony, whom we knew personally; and we are of the vast number who sincerely regret the loss to the profession of a worthy laborer in its ranks.

We remain, most respectfully yours,

BACHRACH & BRO.

NEWPORT, R. I., Oct. 16, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: The sad news of the death of H. T. Anthony reached me to-day in Newport.

Allow me to offer my sincere regrets at the death of so worthy a gentleman, and sympathise with you in your affliction. I remain,

Yours respectfully,

L. ALMAN.

ST. LOUIS, Oct. 13, 1884.

MR. EDWARD ANTHONY:

Mr. Ayers has just informed me of the death of your brother.

Please accept my deepest sympathy in so great a bereavement, and to you a life long associate. Every one that knew him will feel the loss, as well as the entire fraternity. With regards,

Very truly yours,

J. C. SOMERVILLE.

NEW YORK, Oct. 11, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: It is with deep regret that I just hear of the sudden death of your, and I may say our, Mr. Henry T. Anthony. He honored me with a call at the gallery only this week, on which occasion I made a negative of him, cabinet size. With sincere sympathy,

Yours truly,

B. J. FALK.

CHICAGO, ILL., Oct. 11, 1884.

MESSRS. E. & H. T. ANTHONY & CO.:

We have just learned with great sorrow of the death of our esteemed friend, and hasten to express our sincere condolence at this sudden and sad event. Please telegraph to Palmer House day of funeral.

{ W. IRVING ADAMS.
EDWARD COPE.
G. A. DOUGLASS.

NEW YORK, Oct. 14, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Dear Sirs: It was with great regret that I learned of the death of Mr. H. T. Anthony, of your firm, and I beg to offer you my sympathy. Mr. Anthony's death will be keenly felt, not only by those who were fortunate enough to be counted among his friends, but also by those who have had business relations with him. By his death photography loses one of its greatest intellects, and a man who has done much towards its advancement and improvement.

Very respectfully,

GEO. P. ERKENBRACH.

BOSTON, MASS., Oct. 13, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: I noticed with sorrow the death of Mr. Henry T. Anthony on Saturday, the 11th inst. Permit me, gentlemen, to express my sincere sympathy in the loss of so prominent a member of your firm.

Respy and very truly yours,
CHANNING R. SELEE.

CLEVELAND, O., Oct. 14, 1884.

EDWARD ANTHONY, ESQ.

My Dear Sir: I am shocked at the news of your brother Henry's death, which came to me this morning.

I offer my respectful sympathy to your family and to the house. Personally, I feel bereaved at the loss of a noble and true friend, such as in this world are seldom found.

Very truly yours,
J. F. RYDER.

CLEVELAND, O., Oct. 11, 1884

COL. V. M. WILCOX.

My Dear Sir: It is with deepest regret I receive the announcement of the sudden death of our associate and friend Henry T. Anthony.

In behalf of the Photographic Merchants' Board of Trade, of which he was an honored member, I desire to express their heartfelt sorrow, and to the sorrowing friends our profoundest sympathy.

Very sincerely yours,
H. Q. SARGENT, Pres.

DETROIT, MICH., Oct. 11, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: Your telegram announcing the death of Henry T. Anthony is received. His life has been so full of work, from which such good has come to the profession he so loved, that it seems wrong to wish that he had not fallen into the sleep of rest and reward. I tender you my sympathy at your parting, and rejoice with you at the honorable record he leaves you.

With respect,
GEO. R. ANGELL.

NEW ORLEANS, Oct. 16, 1884.

MESSRS. ANTHONY & CO :

I have just heard of the death of Mr. H. T. Anthony. I hasten to express my sympathy and regret for your great loss—a regret that will be felt by the whole photographic world, for which he had done, and was doing so much; and although your strong and well organized firm will go on its steady course as before, yet the kind face of your old companion

will be missed for many a day. Long may the firm continue what he so largely assisted in making it, the leading house in its line.

Yours sincerely,
E. K. HOUGH.

PHILADELPHIA, Oct. 16, 1884.

EDWARD ANTHONY, ESQ.

My Dear Sir: I feel as though I wanted to express my warm sympathy with you over the loss of your beloved brother.

I, too, have had to pass through the trial of parting with an older brother who was my daily companion, and can therefore understand your loss better than those who have not been bereaved. I shall more publicly than this testify to the good services rendered me personally and to so many of our fraternity by your useful, generous brother.

Very truly yours,
EDWARD L. WILSON.

SYRACUSE, N. Y., Oct. 14, 1884.

MR. EDWARD ANTHONY.

Dear Sir: The letter of the Secretary of our Association, conveying the sad information of the death of your brother Henry, was received by me with profound sorrow.

Of late I have seen very little of him, but when I had that pleasure I found him the same kind and genial gentleman as of old.

To you the blow must come with crushing weight, and the loss irreparable.

I wish to express to you my warmest sympathy.

Very truly yours,
F. HENDRICKS.

CHICAGO, Oct. 11, 1884.

MR. EDWARD ANTHONY.

Dear Sir: I have just learned of the death of your brother Henry, and am very much surprised and grieved at the sad news. When I was in New York last he was in appearance to me seemingly so much better than early in the spring that I thought he had many years of usefulness before him; and to the many who inquired in regard to his present health I invariably answered that he was very much better, and improving. Now to be suddenly apprised of his death is truly a painful shock. I do with the thousands of the photographic fraternity deeply sympathize with you in your loss. I feel that I have lost one of my best friends. Extending to you and your family, to Col. Wilcox, and to all that loved and honored him all the sympathy that can be given by man to man, I am yours in sorrow,

GEO. A. AYERS.

PHILADELPHIA, Oct. 17, 1884.

V. M. WILCOX, ESQ.

My Dear Sir: Your kind favor was duly received and I can assure you I deeply regret I did not arrive in New York in time to attend Mr. Anthony's funeral. I have known Mr. Anthony so many years, and *always* received such kind and courteous treatment from him that at any inconvenience I would have paid a last tribute of respect to one so deserving. Please convey my kind regards and condolence to Mr. Edward Anthony.

Believe me, sincerely yours,

JOHN CARBUTT.

NEWTONVILLE, Oct. 12, 1884.

MY DEAR COLONEL: Your telegram announcing the death of Mr. Henry T. Anthony was indeed a surprise, for only two days previous I received from him a pleasant letter giving assurance of improved health and hopeful encouragement of approximate recovery. In common with yourself and the multitude of friends with whom his name was familiar, and his friendship greatly esteemed, I unite in an expression of sincere sorrow for his death. For myself I feel his loss a personal affliction, having long enjoyed his acquaintance and greatly valued his genial correspondence. Kindly remember me to Mr. Edward Anthony and assure him of my sympathy in this bereavement.

Very truly yours,

G. H. LOOMIS.

PORTLAND, ME., Oct. 15, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: The circular letter from the Secretary of the Photographic Merchants' Board of Trade, announcing the death of Henry T. Anthony, is just received, and fills us with profound sorrow. Although our personal acquaintance with him covers but few years, for more than a quarter of a century we have been familiar with his work, and have ever recognized in him *the mentor* and friend of the photographer.

"Ingenio stat sine morte decus."

To the remaining members of your esteemed house we join in your bereavement! Especially do we sympathize with him who for so many years has been its honored head. May the thoughts of the multitude, who to-day feel and share his loss, lighten his sorrow, and may he long be spared to enjoy the rich fruits incident to a useful life.

Very truly,

J. D. DEXTER & CO.

KANSAS CITY, MO., Oct. 13, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: It is with sincere regret that we have just received the circular notice from Mr. Angell of the death of our honored friend Mr. H. T. Anthony. We trust the memory of his life may not pass from our minds, and that we, when our time comes, leave behind us as pleasant recollections of a useful and well spent life. We in common with his many friends extend our heartfelt sorrow that we have been obliged to part. Very truly your friends,

MULLETT BROS.

NEW YORK, Oct. 14, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: Permit me to express to you my most sincere condolence and sympathy on the death of Mr. Henry T. Anthony.

As a colleague and co-laborer in the field of photography, he has always proved a true and valued friend, not only to me, but to a thousand others.

With his superior knowledge and extensive experience he was always willing to advise, for which he is entitled to our gratitude and tribute far beyond the grave.

May he rest in peace, and may his memory live for ages among the followers of the profession.

Very respectfully yours,

CHAS. EHLMANN.

NEW YORK, Oct. 14, 1884.

MESSRS. E. & H. T. ANTHONY & CO.:

The death of Henry T. Anthony brings to my recollection a noble deed of his which is probably forgotten, or not known to many photographers of the present day.

The writer was one of the Committee appointed at a meeting of the Photographers of the United States held at Cooper Institute in this city to *prevent the re-issue of the Bromide Patent*, a patent which had been a great annoyance as well as a great expense to the fraternity. This committee had appealed in vain for funds enough to work with. The "hearing" before the Commissioner of Patents was to take place in Washington in a few days. The lawyers engaged positively refused to proceed with the case unless they had their money. In this strait I wrote to Mr. Anthony, and he immediately answered, *I will give my check for \$500 00.* That check, with another of the same amount, enabled us to take the lawyers with us before the Commissioner, and the re-issue was refused, thus freeing us *all* from a great wrong as well as a great hindrance in the prosecution of our difficult, del-

icate, mystic art. I consider it right to make known this noble deed that it may add another leaf to the laurel which crowns the head of Henry T. Anthony.

ABRAHAM BOGARDUS.

N. O., La., Oct. 18, 1884.

MESSRS. ANTHONY & CO.

Gentlemen: My deepest sympathy with you for the loss of your and everybody's friend, H. T. Anthony. Very truly,

THEODORE LILIENTHAL.

JONESBORO, TENN., Oct. 20, 1884.

E. & H. T. ANTHONY & Co.

Dear Sirs: My deepest and heartfelt sympathy with Mr. E. Anthony in the death of Mr. H. T. Anthony, which I only learned last evening in the *Picture and Art Trade*.

Truly, L. W. KEEN.

NEW YORK, Oct. 20, 1884.

I was very much shocked to learn of the death of Mr. H. T. Anthony, which occurred on the very day you wrote me. Mr. Anthony had led a most useful life, and his active services will be long remembered.

Very truly yours,

C. F. CHANDLER.

OFFICE OF THE SECRETARY
OF THE

PHOTOGRAPHIC MERCHANTS'

BOARD OF TRADE.

DETROIT, MICH., Oct. 11, 1884.

DEAR SIR:

A little more than a year has elapsed and death has a second time entered our ranks,

HENRY T. ANTHONY

IS DEAD.

A veteran in years and service has passed away. His reputation has gone beyond the narrow limits of our Association, beyond our own land, making for him a respected and honored name wherever the Art of Photography is known.

The following telegram announcing his death reached me to-day:

NEW YORK, October 11, 1884.

GEO. R. ANGELL, Detroit.

Henry T. Anthony died this morning at seven o'clock.

E. & H. T. ANTHONY & Co.

I mail it to you with regret.

Fraternally yours,

Geo. R. Angell,

Secretary.

SAVANNAH, GA., Oct. 18, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Dear Sirs: I am in receipt of an "In Memoriam" on the death of H. T. Anthony from G. R. Angell, Secretary of P. M. B. of T., which is the first intimation I have had of this sad event.

I cannot express to you the regret I feel at the loss of so good a man, and so kind a friend as I have found him to be. Allow me to join in the greatest sympathy with his bereaved relatives and friends,

And remain ever truly yours,

D. J. RYAN.

The following was indited by a little flower-girl whose acquaintance Mr. Anthony made at Richfield Springs. The flowers alluded to were received by Mr. Anthony, and this letter, it will be perceived, was written on the day of his death.

RICHFIELD SPRINGS, Oct. 11, 1884.

DEAR FRIEND:

I sent you a box of pansies some time ago, and I have not yet had time to write to you, as I have been so busy with my studies. I hope you will not be offended at a little flower-girl taking such a liberty as to send you a box of pansies. Mr. Anthony, as you have been so kind to me, I wanted to show you in some way that I appreciated your kindness; but as the frost came, and much sooner than we expected, I did not have flowers enough to send you a larger box; but I will remember you in the spring, when the forget-me-nots blossom, as they are much prettier then than at any other time, and I will send you a nice box of them. I have been to school every day this fall since the middle of September until to-day, and I am not well at all. I study the *Fifth Reader*, *Practical Arithmetic*, *Intellectual Arithmetic*, *Swinton's Speller*, *Swinton's Highest Geography and Grammar*, and that is all; but mamma is thinking about having me take German lessons, though she is afraid that it will be too much for me, for I am inclined to head-ache, and she thinks it may be better for me to wait until next winter; but if I want to I may, and I am quite sure I will. It looks very gloomy around here now, and all the boarders have gone away, and we have had several heavy frosts since you left, and we will very soon have snow. Then I will be glad. I cannot think of any thing more to say, so good bye.

From your friend,

MAGGIE BOLTON.

GALVESTON, TEX., Oct. 16, 1884,
MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: The announcement through the Secretary of the Photographic Merchants' Board of Trade, of the death of Mr. Henry T. Anthony, causes feeling of sympathy and deep regret. His loss will certainly be felt by the photographic fraternity.

Very truly,
BLESSING & BRO.

NEW YORK, Oct. 21, 1884.

E. ANTHONY, ESQ.

Dear Sir: Please accept warmest sympathy and condolence in your bereavement at the loss of your kind brother, Henry T. Photography has lost a most devoted champion, and everyone who had the pleasure of his acquaintance will feel deeply the loss of a kind and unselfish friend.

Yours very respectfully and sincerely,
W. KLAUSER.

NEW YORK, Oct. 21, 1884.

MR. E. ANTHONY.

Dear Sir: In the great sorrow that has befallen you and your family permit me to express to you how deeply I share your grief. I was first acquainted with Mr. Henry T. Anthony in 1853, and since then I have had the good fortune of being counted among his friends. I respected and esteemed him highly, not only on account of his knowledge and social qualities, but also for his kindness towards all, and his friendship, which was true, reliable—not a mere word, as is so often the case. His departure will be felt by everyone who knew him; but for you, Sir, and for his friends the loss of such a good-hearted man is a great, an irreparable one. Time will soothe our sorrows. We will never forget him.

I am, sir, yours very respectfully,
P. C. DUCHOCHOIS.

Mr. E. Anthony would hereby tender his sincere thanks to the numerous kind friends who have sent letters and telegraphic dispatches of sympathy with him in this time of great bereavement. It would have been a matter of great gratification to him to have been able to write to each personally, but as that was manifestly impossible he adopts this course to acknowledge the kind sympathy so universally expressed.

In this Mr. Wilcox unites with him.

Allusion is made above to a biographical sketch published in the *British Journal of Photography* for Sept. 26. It is as follows:

Mr. Henry T. Anthony.

In our present issue we introduce a portrait of Mr. Henry T. Anthony, of the well-known house of Messrs. E. & H. T. Anthony & Co., of New York, representing one of the oldest firms in the United States engaged in photographic supplies.

Mr. Anthony was born on the 18th of September, 1814, receiving the usual preliminary education, and entered Columbia College when fourteen years of age, graduating with honors in 1832.

In selecting a vocation, that of civil engineering offered the most promising field for his capacities, and among his early engagements was one on the first survey of the Erie Railroad. About this time the New York Croton Aqueduct was projected, and Mr. Anthony spent a year, under the direction of Major Douglass, in the preliminary survey and location, and subsequently was appointed resident engineer of an eleven-mile division of this famous work. During this engagement he became greatly interested in the newly discovered daguerreotype process, and with his brother Edward, who had likewise become enamored of the magic art, began its study and practice with an amateur enthusiasm—not, perhaps, with a thought that it would eventuate in a lifelong business avocation.

Completing his engineering engagement on the aqueduct division he accepted a call to a clerkship in the Bank of the State of New York, which he subsequently resigned to fill a position offered in the survey and construction of the Hudson River Railroad, the section assigned him being the New York division of thirteen miles. Upon the completion of this service he was offered his former position in the bank, where he remained until his brother Edward had embarked in the manufacturing, importation, and sale of daguerrean and photographic supplies, when he quitted banking and became a partner with his brother in business in 1852, assuming special charge of the

manufacturing department, for which previous study and investigation had qualified him.

To become successful in any business or professional pursuit it is essential that one love it, and Henry T. Anthony was, from the start, thoroughly devoted to his work. Every scrap of information bearing upon the new discovery was seized and utilized. His early familiarity with physics and chemistry greatly aided his progress, and with such materials and appliances as could be had on either side of the Atlantic he worked out improvements over existing methods and formulæ, and was foremost in the introduction and practical use of the collodion and paper printing processes.

All the specialities sold for these purposes by the firm of which he was partner were prepared by his formulæ and direction, and he was the originator of very many of the improvements in practical photography and its appliances which are in extensive use throughout the country.

The required brevity of this notice will not permit special mention of many matters connected with the progress of the art and science of photography in which the active brain of Mr. Anthony has been fruitful. Those which have appeared in print in the various journals are voluminous; but his private correspondence in reply to inquiries for needed light on the subject investigated was still more extensive, and hardly less useful in its results. To many new beginners he has been an open cyclopædia of information, and what knowledge he had acquired by diligent research was cheerfully and freely imparted to the craft.

For the purpose of a more efficient vehicle of communication with photographers it was decided by the firm to publish a monthly BULLETIN, and this, under the editorial supervision of Mr. Anthony, has become a valuable accession to the serials devoted to this department of art industry.

The several local and national organizations devoted to photographic art-science have found Mr. Anthony a generous contributor and co-worker, and, though advanced age may circumscribe the field of his ac-

tivities, it will be difficult for him to fold his hands and discontinue his interest in a vocation to which he has so long been devoted.

We add that as a man, an active investigator in photographic science, and as one of the oldest editors connected with photographic serial literature in the United States of America, Mr. Henry T. Anthony is universally beloved and respected wherever he is known. Our portrait, which was taken expressly for the purpose, is an admirable likeness of a cultured and worthy gentleman.—*British Journal of Photography.*

How Dr. E. Albert Treats his Negatives of Paintings.

It is generally known that Dr. E. Albert is engaged at Munich in photographing oil paintings by the electric light, isochromatized collodio-bromide plates being used; and the following particulars as to the after-treatment of the negative will be read with interest.

The negative varnish used consists of:

White shellac,	100 parts.
White resin (colophony),	70 "
Sandarac,	80 "
Venice turpentine,	60 "
Alcohol,	2,000 "

On the back of the plate a matt varnish compounded as follows is used:

Matt varnish.

Ether,	450 parts.
Benzole,	250 "
Sandarac,	50 "
Chloroform,	50 "
White-resin (colophony)	5 "
Canada balsam,	5 "

The resinous materials are first dissolved in the ether, and the solution is filtered, after which the benzole and the chloroform are added.

The above is a very excellent receipt for matt varnish—indeed, better than many which we have tried—but it is necessary to use the genuine benzole, not the light petroleum sold under the designation "benzoline."

On the surface given by the matt varnish the necessary work is done by means of the lead pencil and the stump, after which the matt varnish may be removed from those parts where it is not required by scraping, or it may be rendered transparent by being painted over with a solution of shellac in aqueous borax solution (this solution is made by boiling a saturated solution of borax in water, with as much bleached shellac as it will dissolve).

The matt varnish is covered with a protective coating or final varnish made as follows :

Gutta-percha, 15 parts.
Purified oil of turpentine, 300 parts.

This protective varnish does not destroy the effect of the matt coating, whereas most other varnishes would render it transparent and dissolve it.

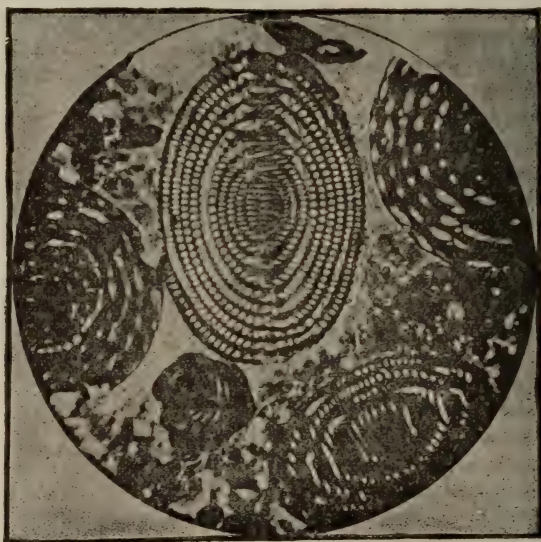
The above details will not only prove of value to those who may have occasion to work upon negatives of oil paintings, but also to photographers who may find it necessary to do much retouching upon their plates.—*London Photo. News.*

How to Photograph Microscopic Objects.

BY I. H. JENNINGS.

LESSON IV.—EXPOSING THE PLATE.

No rule can be laid down as to the duration of the exposure. It depends (1st) on the focal length of the lens used ; (2nd) its aperture, wide-angle lenses being far quicker than those of low angle ; (3rd) the nature of the light used ; (4th) the nature of the object, yellow and brown objects always



SECTION OF ALVEOLINA LIMESTONE, HERAULT, BELGIUM.

requiring a prolonged exposure ; (5th) the development. An operator who uses a weak developer will always expose his plates for an unnecessarily long time. The beginner will perhaps think the exposure the most difficult part of photo-micrography, but as he progresses he will alter his mind, and think the proper illumination of the object far more difficult.

Using a good paraffine lamp, and lenses of from 5 inches to $\frac{1}{8}$ -inch, the exposures may vary from a fraction of a second to half an hour. For instance, the larva of a flea, a very transparent object when proper-

ly illuminated, will not require more than half a second with the 2-inch objective, while with the same lens a section of coal may require twenty minutes. The section of *Alveolina* limestone figured below, although of a white color, and apparently very transparent, had an exposure of fifteen minutes. As a rule, all rock sections will require a rather long exposure, as they stop a large amount of light. All sections should be as thin as possible; yet a good color is of more importance than thinness. The writer has a section of a tertiary limestone

from Bengal, of a strong yellow color, which he has often vainly tried to photograph satisfactorily, although the section is most admirably cut, and very thin.

The wing of a midge, here shown, will serve as a good example of a very transparent object, which yet has plenty of detail. This object had an exposure of one second; less would have sufficed with a more powerful lamp.

High powers, being used chiefly with very transparent objects, do not require the tremendous exposures that people generally



WING OF MIDGE (PSYCHODA).

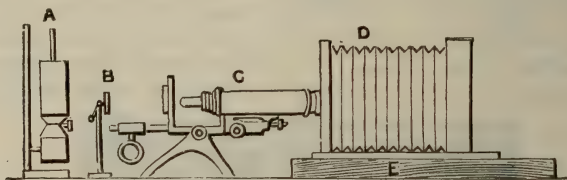
imagine. A $\frac{1}{16}$ -inch, when properly illuminated, will give a good clear image on the focussing screen five feet away from the object. When the writer first began using high powers, he heard such exaggerated statements about the difficulty attending their use, and the long exposures they required, that on first trying *P. angulatum*, he gave an exposure of an hour to

this transparent object. On developing, the plate came out almost clear glass; only a faint ghost of the object could be seen on the plate. A subsequent exposure of fifteen minutes, under the same conditions, gave a fair negative. All objects are not fitted for photography; therefore it may be taken as a rule that if any object bears an exposure of half an hour with any lens,

without being fully exposed, it is simply useless to attempt it. There is a little scarlet mite common in gardens, the scarlet *Trombidium*, which, owing to its color, may be exposed for any period without getting any better photograph than a blank outline. Such objects should, if possible, be bleached before attempting to photograph them.

When magnesium ribbon is used as the source of light, the exposures become very rapid. The writer has never used this light with low powers, but he has found ten seconds to fifteen seconds ample for diatoms with the $\frac{1}{16}$ -inch objective.

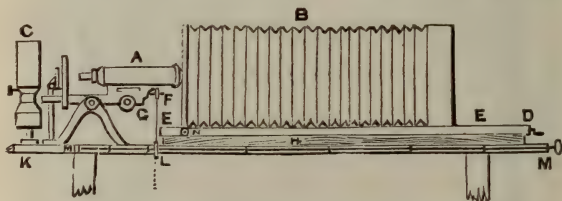
The dry plates recommended for photomicrography are the most rapid in the market. The writer has used Swan's ten



ARRANGEMENT OF MICROSCOPE WITH SHORT CAMERA FOR USE WITH EYE-PIECE.
A, lamp; B, condenser; C, microscope; D, short camera; E, block to support camera.

times collodion, and thirty times collodion; and while the ten times are excellent for low powers, he still prefers the thirty times plate for every purpose. He has also used plates still more rapid, and found them satisfactory in every way. Very rapid plates are often difficult to manipulate when used for landscape work, but when used for photomicrography they become as easy to de-

velop as any slow plate, while they have the great advantage of increased rapidity. The writer is not alone in advising the use of rapid plates, for the author of *Practical Microscopy* has obtained good results on Swan's fifteen times plate, while Dr. Sternberg, one of the most experienced and accomplished of living photomicrographers, uses Eastman's instantaneous dry plates.



ARRANGEMENT OF MICROSCOPE WITH LONG CAMERA WHEN THE EYE-PIECE IS NOT USED.

A, microscope; B, camera; C, lamp; D, winch screw; E, base-board; F, fine adjustment; G, band connecting F with wheel of rod; L; H, block supporting camera; K, table; L, wheel of focussing rod; M, focussing rod; N, rack and pinion for moving camera front.

The maker of the plates is of little importance. The writer has tried most of the makes in the market, and has got good results with all. The chief thing is that the plates be made of good hard gelatine. If a sample of plate be found to be prepared with soft gelatine, reject it at once. Frilling may be laughed at, but shrinkage of the film is simply ruin to all good work.

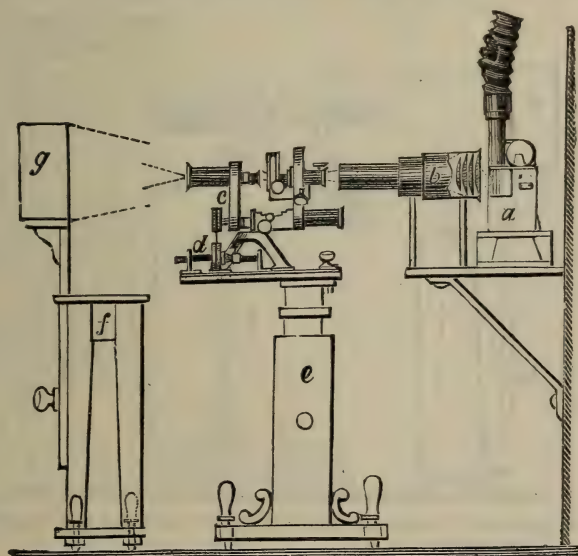
We come now to the actual exposure of the plate in the camera. First place the

object on the stage of the microscopes, choose your lens, and bring the object into focus. Notice carefully the chief point, that you wish to be shown clearly in the photograph, that special attention may be paid to them in focussing and exposing. Then lay the microscope in the horizontal position, place the lamp in front, and adjust the illuminating apparatus in the best position. The object may be seen best with oblique light: in this case be very

careful, or the plate may not be fully illuminated, when the negative would be rendered worthless. When the illumination has been satisfactorily adjusted, draw the front of the camera up until the eye-piece of the microscope fits in the hole made for its reception. A hood of black velvet will probably be necessary to render the connection of camera and microscope light-tight. This done, view the object on the screen, which will be very indistinct. If the adjustments of the microscope are within reach, by their means slightly withdraw the lens from the object until the latter is

in good focus. If the eye piece be removed, and the adjustments are, therefore, out of reach by reason of the length of the camera, turn the focussing rod until a satisfactory focus be obtained. When this is accomplished, leave the apparatus for a few minutes to allow of its expansion from the heat of the lamp. With low powers, this expansion is hardly likely to affect the results, but with high powers is very injurious.

Sometimes, in fact, when using a high power, the expansion of the metal parts of the apparatus during a long exposure may be so great as to throw the object quite



a, Magnesium lamp; *b*, condensers; *c*, microscope; *d*, focussing rod attached to fine adjustment; *e*, support of microscope; *f*, support of focussing-screen *g*, and moving backwards and forwards in a line with the microscope, either in guides or on rails; *g*, focussing-screen.

out of focus. It is thus advisable to place the lamp as far away from the microscope as possible, consistent with suitable illumination. The writer frequently uses a cardboard screen between the lamp and microscope, with an aperture to allow the rays to pass through. By this means the microscope is kept cool, and possible injury to the lens and object averted. The alum cell, used with the heliostat to stop the heat rays, can hardly be used successfully with lamplight. Sometimes, however, a thin cell, containing ammonio-sulphate of

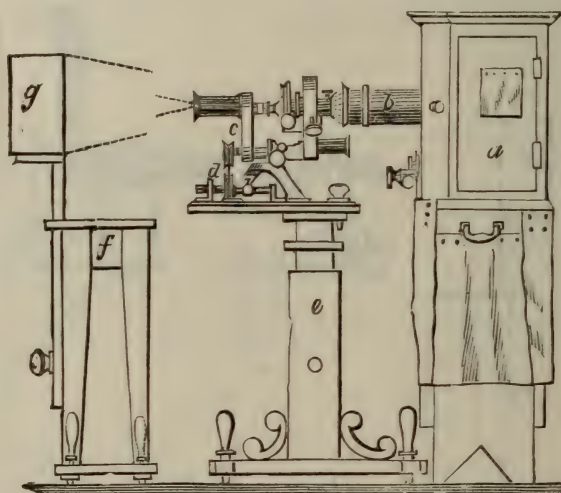
copper, may be employed when photographing very transparent diatoms, and answers the double object of keeping off the heat from the lamp and giving a more diffused light. For the latter purpose, with low powers only, a strip of fine ground glass or oiled paper may be placed beneath the object. A slide of blue glass, 3 inches by 1 inch, is also used by some operators for softening the light.

All being ready for an exposure a blackened card must be placed opposite the lens, or below the stage, to cut off the light.

With a low power, the card should be in front of the lens. The dark slide may then be inserted, and the shutter drawn up. After waiting for a few moments to allow all vibration to cease, the card in front of the lens must be rapidly removed. During the exposure the operator must abstain from walking about the room, for the vibration so produced would injure the sharpness of the picture, more especially with low powers and short exposures. When the exposure is deemed sufficient, the blackened card must be replaced in front of the lens, and the shutter pushed down. If other expos-

ures are to be given, do not turn the lamp down, but leave the flame the full height, until the next plate can be inserted in the camera. In this way the alternate expansion and contraction of the microscope, etc., is avoided. If, on developing, the first negative be found either over or under-exposed, try again, without disturbing the apparatus.

This and the former figure illustrate the method adopted by some workers of using the microscope in a dark room, and thus dispensing with a camera. If the student have sufficient room at his disposal, and



a. Electric light apparatus: an incandescent lamp might be substituted with advantage. The other letters same as in the figure preceding.

can fit up an apartment especially for his work, perhaps this arrangement is the very best that can be used; it is, however, hardly suited to beginners. The references to each figure will suffice to explain the general arrangement of the apparatus.

LESSON V.—DEVELOPMENT.

The development of a photo-micrograph does not differ much from that of other negatives, but requires somewhat more patience, as the image on a properly exposed plate is usually slow in appearing, and must not be "forced" in any way. Any ordinary dry-plate developer may be used, but

the writer has found that known as the sulphite developer answers best.

Ferrous oxalate is recommended by some photo micrographers, notably by Dr. Sternberg, but is hardly sufficiently "elastic" to satisfy all requirements. It has the great merit of being clean and simple, while it never stains the negatives, as some preparations of pyrogallic acid do; but the operator will find that with this developer he has very little control over the development. In fact, the development is so mechanical that some operators, like Dr. Sternberg, are content to place the plate in the solution and let it take its chance. No one

who has become used to pyrogallic acid will ever care to use ferrous oxalate, and the writer would not advise the beginner to use it, but at once to master the difficulties of pyrogallic acid and ammonia.

However, as some may prefer to try what can be done with ferrous oxalate, the formula for this developer is given here:

Saturated solution of ferrous sulphate, 1 part.
Saturated solution of potassic oxalate, 3 parts.

The potassic oxalate should be neutral, but as it frequently is alkaline, a few crystals of oxalic acid may be added, until the solution is neutral to test paper. The ferrous sulphate should be added to the potassic oxalate, not *vice versa*. A solution of potassic bromide, 20 grains per ounce, should be kept at hand. A few drops of this will be useful to add to the developer in case of over-exposure.

The developer which the writer prefers, and which he has used successfully for all sorts of work for some years, is the following:

A.—Pyrogallic acid, . . . ½ ounce.
Sodic sulphite, . . . 1 “
Water, 40 ounces.
Citric acid, 1 dr.
B.—Liquor ammoniæ, . . . ½ ounce.
Potassic bromide, . . . 40 grains.
Water, 40 ounces.

These form stock solutions, and will keep indefinitely. Both had better be kept in stoppered bottles. The sodic sulphite must be good; otherwise, good results need not be expected. Some writers have stated that sodic sulphite produces green fog, but this is hardly correct. The writer had used the sulphite developer for over two years before he saw anything of green fog. He had been accustomed to buy his chemicals from a good chemist, and had always paid rs. 6d. per pound for sodic sulphite. Happening once to require some immediately, he purchased a sample from the nearest shop, and paid 6d. per pound for it. It was wretched-looking stuff, but he made it up. On developing, every plate

was covered with a glorious sheen of green fog. Happily, this was completely got rid of by applying Mr. H. Farmer's solution, which will be described further on. *Moral:* Buy the best chemicals from a good chemist, and do not grudge the price paid for them.

Another modification of the pyrogallic developer is given by Mr. S. Fry, as follows:

A.—Acid pyro., . . . 1 ounce.
Saturated acid solution of sodic sulphite, 12 ounces.
B.—Ammonium bromide, 300 grains.
Ammonia liquor, . . . 2 ounces.
Water, 12 ounces.

Take 1 ounce of A; put it in a 20-ounce bottle, pouring on it 15 ounces of water. Do the same with B. Use equal parts for developing.

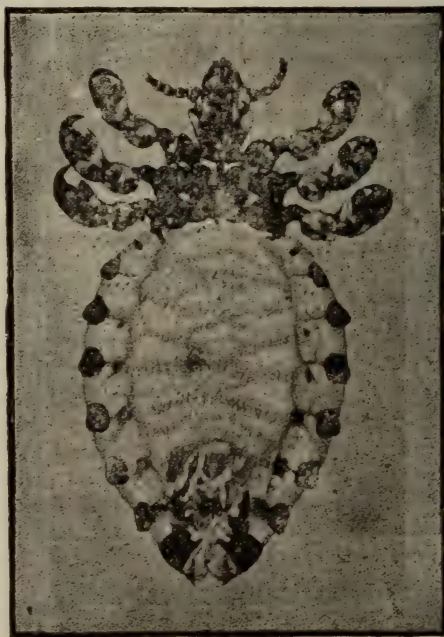
To develop a plate, proceed as follows: Have a good sized lamp glazed with pale red glass, not with the black abomination generally called “ruby,” which is almost opaque to light. A good lamp may be made from any kind of box, by fitting to it a sliding pane of red glass in place of the lid, and putting a small paraffine lamp therein. A chimney should be made at the top, to ventilate the box. This arrangement will give a flood of light without endangering the plate. The writer always develops close up to the lamp, and has never yet fogged a plate. If the operator cannot see what he is doing, he need not expect good negatives, but may reasonably look for indications of failing eyesight after a few months' work. So, to get good negatives, and save temper and eyesight, have plenty of light of the right sort. No light is really non-actinic, and much of the “ruby” glass in use is quite as unsafe to use as the yellow glass used in developing wet collodion plates. Yet, once in the developer, even yellow glass may be used with complete safety. It is only while the plate is dry that exposure to a strong light is likely to act injuriously. Thus in changing plates, or in taking them from the slides to develop, let the lamp be shaded or turned

down; but while developing, every detail must be clearly seen.

To proceed. Place the developing dish near the lamp; pour into the developing cup, for a half-plate, 1 ounce of the pyrogalllic solution, and $\frac{1}{2}$ -ounce of the ammonia and bromide. Place the plate in the dish, and pour over it the mixed solutions. If the image runs out rapidly, pour the developer off, and make up a fresh developer of 1 ounce pyro. and 1 dram ammonia and bromide. If, after this, the detail does not

come out satisfactorily, pour the developer back in the cup, and add more ammonia. By varying this mode, plates that have received thirty times the correct exposure may be satisfactorily developed. They will hardly have the brilliance and "pluck" of a properly exposed negative, but will yield fair prints.

If the image does not make its appearance after it has been in the developer about a minute, add the remaining $\frac{1}{2}$ -ounce of the ammonia solution. The image will



PARASITE OF OX. 2-inch obj.

then slowly appear, if the plate has been properly exposed; but if under-exposed, only further doses of ammonia will bring it out. In the latter case, take no further trouble with the plate, but at once expose another, for an under-exposed plate is simply useless.

It will be found in developing some negatives that one part will develop more readily than another, and become so dense as to be quite unprintable. The photograph given above (parasite of ox) is an example of this. On developing, the body appeared first, and became of an alarming blackness

before the legs had got little more than their outline. The developer was at once thrown off, and the negative well rinsed in water. Fresh developer was made up, and the tray tilted up, so that when the negative was again placed in the dish the developer would cover the parts only partially developed, which in this case were the head and legs. The dish was gently rocked all the time, and the negative, when finished, was of uniform density. By this means the after reduction of the negative was avoided.

If the development proceed satisfactorily, don't be in any hurry to take the plate from

the developer; over-development will not do much harm, while the contrary would ruin it. When all the details are well out, examine the plate, by holding it up before the lamp. Should it prove sufficiently dense, rinse it in water, and place it for a minute in a solution of alum and citric acid; wash again, and put it in another dish containing hyposulphite of soda made up thus:

Hypsulphite, 4 ounces.
Water, 20 "

When the creamy bromide of silver is dissolved, which may be known by the plate becoming quite clear and transparent, place the negative in fresh hyposulphite for a few minutes; no fear need be entertained of the hyposulphite solution *weakening* the negative. Then put the plate in running water for half an hour. This will be sufficient, but any trace of hypo. will be got rid of in the next bath:

Alum, 2 ounces.
Citric acid, 1 ounce.
Water, 20 ounces.

This solution will also harden the film, and render it less liable to injury from scratches or wet. The final immersion in alum should be regarded as absolutely necessary. It will brighten up the negative, removing any stains which the developer may have left, and make it "quicker printing."

The negative should not be dried too rapidly. In fine dry weather it can be best dried by placing it out of doors. In winter time, the writer stands his negatives on a warm mantel-piece, where they dry in one or two hours. The only precaution to observe is, that the plate should have previously been soaked in the alum bath for at least five minutes; otherwise, if the film be composed of soft gelatine, the heat of the mantel-piece is apt to melt it.

LESSON VI.—DEFECTS IN THE NEGATIVE.

As the defects in photo-micrographic negatives are very numerous, it may be well to mention the chief, and their remedies, when such exist.

I. *Unequal Illumination.*—This is very

apt to occur when using very oblique light, but may happen also with central light, from improper arrangement of condensers, etc. This defect may be known by the negative being dense on one side of the plate and thin on the other. Do not blame the plate maker for improperly levelling his plates; this defect sometimes occurs, but very rarely. If the difference of density on each side is not very marked, it may be remedied by using matt varnish on the thin side of the plate, to diffuse the light when printing. Adding a little yellow dye to the varnish often improves the result, but in all cases the rough edge of the varnish should be softened by the use of a little alcohol or ether, or a nasty mark will be left on the print, just under the boundary line of the varnish.

2. *Too Powerful Illumination.*—In this case the object is "drowned in light," and the picture comes out flat and degraded. Remedy: take another negative.

3. *Reflection from the Apparatus.*—When the tube of the microscope is not lined with cloth or velvet, a bright central spot may often be seen on the screen while focussing, and a corresponding black patch will be found on the negative, which will be worthless. When using the eye-piece this defect will not be met with. Reflection from the camera will also ruin the negative; also using the eye-piece without the cap. Let the inside of the camera and microscope tube be a dead black.

4. *Access of Stray Light to the Plate*—Probably through the connection of camera and microscope not being light-tight. Result—general fog. Use a thick black velvet hood to connect the microscope with the camera, and keep it in place with elastic bands.

5. *Green Fog.*—This may arise from the use of impure sodic sulphite, or, in the plain pyro. developer, from using too much ammonia. Green fog appears to be a silver deposit, from the fact that certain silver solvents get rid of it at once. Bichromate of potash, or peroxide of hydrogen, may be used, but the writer recommends the following, which is given by Mr. Howard Farmer in the *Year-Book* for 1884:

- A.—Potassium ferricyanide, 1 ounce.
 Water, 20 ounces.
 B.—Sodium hyposulphite, 1 ounce.
 Water, 20 ounces.

First wet the negative if it has been dried. pour a little of the hypo. solution in a cup and add a few drops of the ferricyanide solution. Dip a plug of cotton-wool in this mixture, and sponge the negative rapidly with it; then plunge it in water, and wash well. All trace of green fog will have disappeared.

6. *Over-exposure*.—This should be controlled in the development. After-intensification rarely produces even tolerable negatives from over-exposed plates. If much over-exposed, don't waste time in trying to patch up the negative, but expose another plate.

7. *Under-exposure*.—There is no cure for this evil: destroy the negative and take another.

8. *Under-Development*.—An under-developed plate is useless. Don't hurry the



PALPI OF MALE GARDEN SPIDER.

development, but be sure all possible detail has been worked out, and examine the negative for density before the lamp.

9. *Thinness*.—The negative appears fully exposed and developed, but is too thin to give good prints. In this case try the effect of covering the back with matt varnish, and print in the shade. Never intensify a negative before trying how it will print. Many a negative that appears too thin will

give perfect prints. The negatives from which the accompanying illustration of "Palpi of Male Spider" was taken furnishes a good example of this. This negative appears a mere "ghost," but prints well and strongly. Had it been intensified it would probably have been ruined. If the matt varnish does not mend matters, the negative must be intensified. There is a choice of intensifiers, but the mercury and

silver intensifiers are most generally used. The mercury intensifier is made as follows :

A.—Saturated solution of mercuric chloride.

B.—Liquor ammoniæ, 10 drops per oz. After soaking the negative in water, it is placed in the bichloride solution until it becomes uniformly white. If requiring only slight intensification, it must be left in only a few seconds, or it will become too dense. Then wash well for five minutes, when the negative must be placed in B, which will turn the plate to a dark color. With a little experience, this intensifier will be found very useful, but all intensification should be avoided if possible. Look for good results to the development alone, and let intensification be merely a last resource.

Other intensifiers are potassium sulphide and ammonium sulphide; either salt may be made up to the strength of 1 dram to 20 ounces of water.

One of the best silver intensifiers is that given by Mr. W. Brooks, and is as follows : "After the plate has been well washed from the hypo. place it in a weak solution of alum and citric acid solution :

Stock Solution.

Saturated solution of alum, 10 ounces.

Citric acid, 1 ounce.

For the solution above named, I dilute one part to four of water, allow the plate to remain in it about five or six minutes; in the meantime, place in a developing cup about (say for a small plate) two drams of the stock solution of alum and citric, and place in it about four grains of pyro.; when dissolved, add a few drops of about a twenty-grain nitrate of silver solution."

This solution is to be applied to the plate until sufficient density be obtained; when the plate is washed, it is placed in the hypo. bath for a few minutes, again washed, and finally treated with alum and citric acid solution to clear it. Plates thus intensified should not first be dried.

10. *Too Great Density.*—This is more frequently met with when using the plain pyro. developer. Perhaps the simplest agent for removing it is Mr. Howard Far-

mer's ferricyanide reducer given above in speaking of green fog. The plate, if dry, is soaked in water for a few minutes, then placed in the solution, and examined from time to time until sufficiently thin. Only a few drops of ferricyanide must be added, or the action will be too rapid. Then wash well in running water, and dry.

11. *Shrinking of the Gelatine.*—This may arise from the gelatine being too soft, or from heat being employed to hasten the drying, which is a great mistake. The shrinking may be slight, spoiling the fine microscopic detail, or may amount to actual distortion of the image. Either way, the negative is ruined; the photo-micrographer is therefore advised to use only plates prepared with hard gelatiné. Since the use of the alum bath has become more general, frilling is not so common as formerly, and the photo-micrographer need hardly be cautioned against it. Still, to avoid this, as well as the more serious evil of shrinking of the film, any plates found to be prepared with soft gelatine should be rejected for microscopic work.

LESSON VII.—PRINTING.

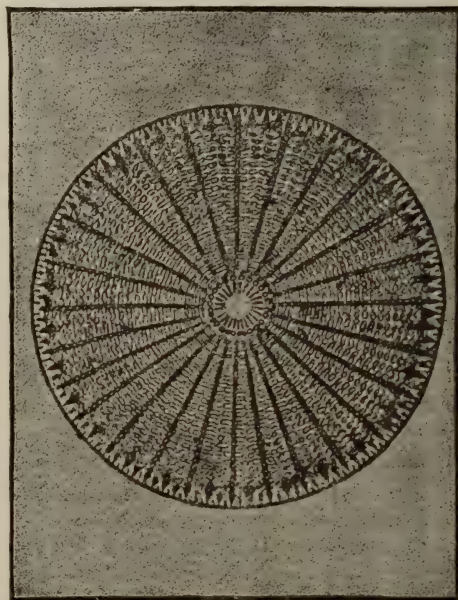
The advice given in the introduction is here repeated: let the photo-micrographer make all his own silver prints, as in no other way can he hope for results of a satisfactory nature. The process is not difficult, and, when once mastered, the microscopist will have the pleasure of seeing his pictures *real* representations of the originals, instead of being little else than caricatures, which is often the case when the negatives are entrusted to another to print. A professional photographer may be able to produce perfect specimens of art from portrait or landscape negatives, yet fail entirely when he tries to print a photo-micrograph, simply from not understanding the nature of the object represented.

Ready-sensitized paper may now be procured of great excellence at a moderate price. The photo-micrographer should purchase the best obtainable, for the best costs at first very little more than the worst, and in the end costs really less, as there

will be no defective sheets to reject, to say nothing of the superior quality of prints to be produced on good paper.

Frequently a photo-micrographic negative may require some little preparation before it is ready to print. For instance, diatoms being, as a rule, very transparent objects, require a short exposure. This exposure, though sufficient to bring out the detail in the diatom, is not long enough to give proper density to the background, which should appear white in the finished

print. In this case the best plan is to "paint out" the background, at the back of the negative, with Bates' or Fallowfield's black varnish. It will be easy to follow with the brush the regular outlines of the diatom; but should any varnish trespass on the edges, don't wipe it off, but let the whole dry. When dry, hold the negative up to the light, and go round the edges of the image with a fine pointed penknife cutting away in an even manner any varnish that intrudes on the edge of the pic



ARACHNOIDISCUS INDICUS X 300.

ture. The varnish should come exactly up to the edge of the image; there should be no intervening space, or failure will ensue. The negatives treated thus should always be printed in the shade—a powerful light would produce an objectionable black halo round the object. All objects which have regular outlines should be thus treated if necessary.

The *Arachnoidiscus* figured above had an exposure of fifteen minutes, with Swift's low angle $\frac{1}{8}$ -inch eye-piece and small microscope lamp. This exposure brought out the diatom sharply and with due printing

density, but the background was weak, and would have printed in with a most objectionable blackness had not the plan of "painting out" been practiced.

Parts which come out insufficiently dense may be strengthened on the film side of the negative with a soft blacklead pencil. This is best done after the negative has been varnished, using a little turpentine to roughen the part to which the pencil is to be applied.

Local reduction has often to be effected, and can easily be done by using the ferricyanide reducer given above. Wet the nega-

tive thoroughly; when the excess of water has drained off, dip a fine brush in the solution and apply to the over-dense parts. As each dense place is reduced, dip the negative in water to stop the reducing action and proceed with the next part.

It will often be found that, no matter what skill may be expended on the negative in strengthening the weak parts and reducing the dense ones, it is impossible to get a harmonious print. Some parts will print in strongly long before other parts are done, and no choice seems to be left but to under print some portions, and over-print others. In this case, good prints may gen-

erally be obtained by the judicious application of cotton-wool. When the quick printing portions are done, cover them with cotton-wool, place the printing-frame in the sun, and print in the denser parts as quickly as possible. In the finished print there should be no mark left by the wool, but all should appear as if printed in at the same time. The writer once photographed a section—transverse—of hazel, which was thicker one side than the other. As the negative showed splendid detail he did not like to destroy it, but made use of cotton-wool, covering the weak part, corresponding to the thicker side of the section, with cot-



HEAD AND JAWS, GARDEN SPIDER.

ton-wool as soon as sufficiently printed and leaving the dense part, which corresponded to the thinner side, to print further in a strong light. In the finished print there was not the slightest indication of the unequal density of the negative.

Very dense negatives should always be printed in strong sunlight; but as such negatives always give harsh prints, they should always be reduced to a proper density by

the ferricyanide reducer. Some, however, are not injured by excessive density. The density that would ruin a portrait or landscape negative may pass unnoticed in a photo-micrograph, or, perhaps, be even an improvement. The chief objection to dense photo-micrographs is that they print very slowly, but in the majority of cases this will be no serious defect. The figure of a spider's head, given above, is from a very dense

negative, which prints very slowly, but otherwise is satisfactory.

Thin delicate negatives should be printed in the shade. The application of matt-varnish or tissue paper to the back of the negative will frequently improve the quality of the print. As a rule, all negatives should be printed somewhat deeper than is required in the finished picture.

For toning the prints on ready-sensitized paper, the borax, or tungstate toning baths will be found the best. The formula for the borax bath is as follows:

Solution of borax, . . . 8 ounces.

Solution of gold chloride, . 1 ounce.

The borax solution is made by dissolving 1 ounce of borax in 80 ounces of water. For the gold solution break a 15-grain tube of chloride of gold in a bottle, and add 15 ounces of water. Each ounce of water will contain 1 grain of chloride of gold.

For photo-micrographs which look best toned a black tint, the tungstate bath is very suitable. The formula is as follows:

Chloride of gold, . . . 1 grain.

Tungstate of soda, . . . 20 grains.

Boiling water, . . . 8 ounces.

To be used when cold.

Many other toning formulæ are used, but the writer has found those given above answer best the requirements of the photo-micrographer.

Before toning, the prints must be washed, either in running water or in several changes of water, to remove all traces of free silver nitrate. A quarter of an hour's washing is not too long. The toning dish should be a large shallow dish of ebonite or porcelain, capable of holding several prints *side by side*—not over each other in layers. Place the prints in the toning bath, and gently rock the dish. They will gradually change color, and when they become of the exact color required, remove them to a basin of clean water.

When all are toned, and *when all the dishes and solutions used in toning are put away*, to avoid all possible contamination by the hyposulphite of soda the prints are transferred to the fixing bath:

Hyposulphite of soda, . 4 ounces.

Water, 20 "

The fixing solution should be prepared shortly before use, and one dram of liquor ammoniæ added to each pint, to neutralize the acidity of the hyposulphite. If the ammonia be not added, the prints, after fixing, frequently appear of a sickly yellow, instead of a good purple or black.

The prints should remain in the fixing-bath from ten to fifteen minutes, and the dish should be rocked all the time to prevent the prints sticking together. They are next transferred to a basin or tub, and washed for two hours in running water. After this they may be placed between sheets of clean blotting-paper. When the excess of water has been absorbed, they should be ironed between dry blotting-paper until quite dry, when a further ironing on the face and back of the print with a very hot box-iron will improve its appearance. If the photo-micrographer have a rolling-press, the ironing may be omitted.

The writer has a frame of prints treated as above, which has been exposed to damp and strong sunlight during three years in a glass-roofed hall, yet no trace of fading can be detected in any one of the prints.

Some subjects, such as diatoms, have a far more delicate and natural appearance if enamelled, either with plain collodion or collodion and gelatine. Full details of this simple process will be found in "Enamelling and Retouching" and "Silver Printing," published by Messrs. Piper & Carter. The photo-micrographer who wishes to excel in his art will find both works simply invaluable.

Our next three or four lessons will be devoted to the consideration of "Preparing Objects specially for Photo-micrography."

FOND DU LAC is proud of its photographer. Mr G. E. Rogers, of that city, so says the *Commonwealth*, is a worthy, painstaking, thorough artist, and his facilities are unsurpassed. Mr. Rogers is an adept at all branches, and has worked at the business both East and West.

FOREIGN NOTES.

[FROM OUR LONDON CORRESPONDENT]

Sulphurous Acid Solution for Use in Making up the Potash Developer. — Just now photographers are crying out very much about the evil consequences of inhaling ammoniacal fumes in the dark room, and although it is difficult to believe that ammonia is answerable for all the evils laid at its door, it is quite possible that persons in weak health may suffer from its violent action on the lungs. The oxalate developer never was much used in England, but now and then some one calls attention to its advantages, and after using it for a few weeks goes back to the pyro. and ammonia. Within the last month or two, however, pyro. developer, made up with potash or soda, has been pretty extensively used by the anti-ammonia party: and one hears developers of this kind spoken of more and more favorably as they are more used. The exact formula which finds most favor over here is that published by Mr. Beach of your New York Amateur Association, and although it is impossible to suppose your readers to be unacquainted with the formula in question I will repeat it here.

No. 1.—Pyro. Solution.

Warm water, 2 ounces.

Sulphite of soda (C. P.) 437 grains to the ounce, . . . 2 “

When cold add—

Sulphurous acid, 2 ounces.

Pyrogalllic acid, $\frac{1}{2}$ oz. of 218 grs.

No. 2.—Potash Solution.

A.—Water, 4 ozs.

Chem. pure carb. of potash (437 grs. to oz.) . . . 3 “

B.—Water, 3 “

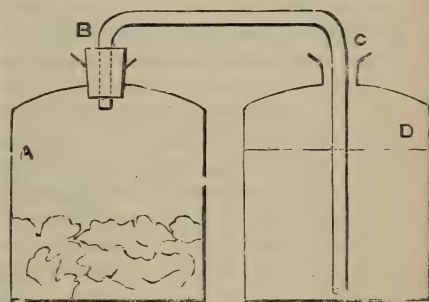
Chem. pure sulphite of soda (437 grs. to oz.) . . . 2 ozs.

Combine A and B in one solution. Both the pyro and the potash solutions should be kept in well-stoppered bottles. To develop a whole plate that has had an “instantaneous” exposure, take three ounces of wa-

ter and add to it one-third ounce of No. 1, and three drams of No. 2.

The sulphurous acid was a stumbling-block, as it was difficult to find any chemist who keeps it in stock, and when at last found it was generally unfit for use. It seems that the solution deteriorates very rapidly when kept in an ordinary bottle, not only by the oxidation of the sulphurous acid to the state of sulphuric acid, but that the sulphurous acid gas readily escapes from its aqueous solution. Indeed, it is stated that the solution cannot be relied upon as altogether fit for use if more than a few days old. Under these circumstances it is better for the photographer to prepare his own sulphurous acid solution; and a very simple apparatus for this purpose is described in a recent number of the *Photographic News*, and is now being sold ready to hand by the stock dealers here. As regards the apparatus and its use I cannot do better than to quote from the description referred to.

“Two bottles fitted up as represented below serve very well for preparing the solu-



tion of sulphurous acid; bottles containing about one pint being a convenient size. To one of the bottles, A, is adapted a well-fitting cork, and a hole large enough to fit the glass tube, B C, is made by means of a rat's-tail file; the hole being made rather too small in the first instance, and filed out to the exact size afterwards. The glass tube is cut to the required length by making a deep scratch with the edge of a three cornered file, and straining it at the scratched part, when it will generally break off with a clean edge. Bending the tube is very

easy, as if held in the upper part of an ordinary fish-tail gas burner, it will become sufficiently soft to yield to a very moderate pressure. Having fitted up the apparatus, about two ounces of hypo are placed in the bottle A, while the bottle B is about three-fourths filled with water—distilled water is perhaps to be preferred. Some sulphuric acid is now diluted with about twice its bulk of water, by first putting the water in an earthenware basin, and pouring in the acid as a steady stream, stirring meanwhile. If the basin is placed in the sink, no harm will be done should the heat produced by the dilution be sufficient to break it; and when cold the diluted acid may be stored in a bottle.

“The cork which serves to adapt the bent tube to the bottle, A, is now just removed for an instant, the other end remaining in the water contained in D, and about two or three ounces of the dilute acid are poured in upon the hyposulphite, after which the cork is immediately replaced. Sulphurous acid is now evolved by the action of the acid on the hypo., and as the gas is generated it is led, as a series of bubbles, through the water in the second bottle. The upper part of the vessel—that is to say, the portions not occupied by the water—soon becomes filled by displacement with sulphurous acid gas, which is a little over twice as heavy as air; so in order to expedite the complete saturation of the water, it is convenient to remove the bottle A, with its tube, from the bottle D, and after having closed this latter by its cork or stopper, to agitate it thoroughly. As the sulphurous acid gas accumulated in the upper space dissolves, a partial vacuum is created, and when the stopper is eased an inrush of air may be noted. When, after passing fresh gas through the liquid for some minutes, no further inrush of air is noted on easing the stopper after closing the bottle and agitating as above, it may be concluded that the water is completely saturated with sulphurous acid. It is scarcely necessary to say that fresh additions of the diluted sulphuric acid may be made to the hyposulphite in the bottle A in order to obtain a fresh sup-

ply of gas, until the whole of the hyposulphite is decomposed; after which one must of course start with a fresh charge of materials.”

A Washing Apparatus for Negatives.—Photographers lose many negatives through imperfect fixation or insufficient washing; and the fact that the consequent evils only show themselves after a lapse of time tends to throw persons off the right scent. The cracking or breaking up of the varnish, and the ready absorption of silver from the printing paper are frequent results of the presence of a small quantity of hypo in the gelatine film, while in the case of imperfect fixation a small proportion of semi-insoluble silver is left in the film, and this ultimately leads to a tinting or degradation of the deeper shades of the subject. As far as the washing out of the hyposulphite is concerned a trough constructed by Mr. Charles Stortz and described by Mr. Germanins Shaw appears to me likely to be useful, and Mr. Shaw's own account of the apparatus will give your readers a sufficient notion of the apparatus to render it easy for them to get one made by a tin or zinc-worker. Mr. Shaw says:

“The following sketch will explain the action, and its complete success may be proved by putting a small quantity of any coloring matter (Judson's dye solution) into the first compartment and watching the result. The hyposulphite, as it is dissolved off the plate, sinks to the bottom of the tank, and as it is the bottom water from each compartment that is forced to flow into the next, and thence to the outside, it will be readily seen that all the plates are thus subjected to a continually changing stream of fresh water. Nor is this all: during the hot weather the troubles of frilling may be effectually avoided by a small supply of ice in the first compartment, without any danger of scratching the films, which it cannot touch.

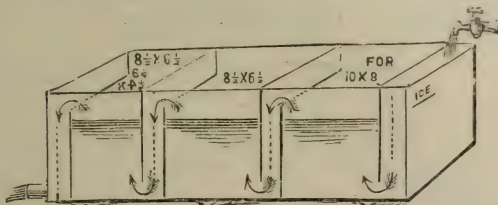
“Although the tank is not a syphon, it will never overflow (if ordinary care is used to regulate the supply), and should the supply of water suddenly fail, this invention has the advantage over syphon washers, as

it does not slowly drain off the water, leaving the film to dry in irregular lines, but the tank still retains sufficient water to quite cover all the plates that are in it. This feature is invaluable where a cistern sometimes empties without any previous warning.

"The comparatively small cost of an apparatus of this kind is more than repaid by the sense of security, and satisfaction of feeling that one's negatives are thoroughly

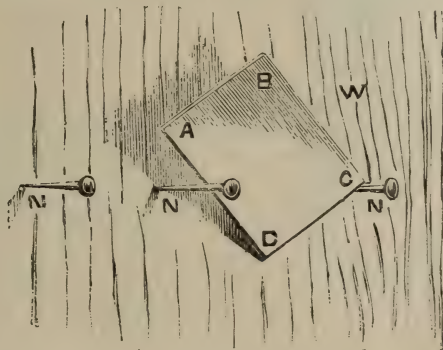
freed from the destroying angel—hypo. I strongly advise all who value the permanency of their work to try it."

It should be mentioned that the compartments ought to be provided with grooves to take the sizes of plates determined upon, and it is sometimes a useful plan to make one of the grooved flats movable, so that the apparatus may be adjusted to plates of any size.



A Convenient Plate Rack.—Numerous as are the forms of plate racks in the market, they all take up table room and often are not to hand just at the required moment. Looking over the *Photographic News* the other day, I saw sketched an arrangement of which I have abundantly proved the value. In a wall are driven nails at such a distance apart as to support plates as represented below, the lower corner, D, being in

contact with the wall, while the top corner, B, is an inch or more forward. It will thus be seen that the face of the plate is inclined a little downwards, so as to fence off the dust, and if any mischief is apprehended from contact of the metal of the nails with the plate it is easy to clothe the nails with short lengths of small rubber tube before driving them in. This arrangement I have seen many years ago in the laboratory of Mr



Walter Woodbury, and have made use of it myself ever since.

A Simple Thermo-Regulator.—Now that photographic work is so steadily gravitating to the direction of gelatine, anything relating to the drying room or the drying box becomes of importance and interest. It is therefore unnecessary for me to offer any

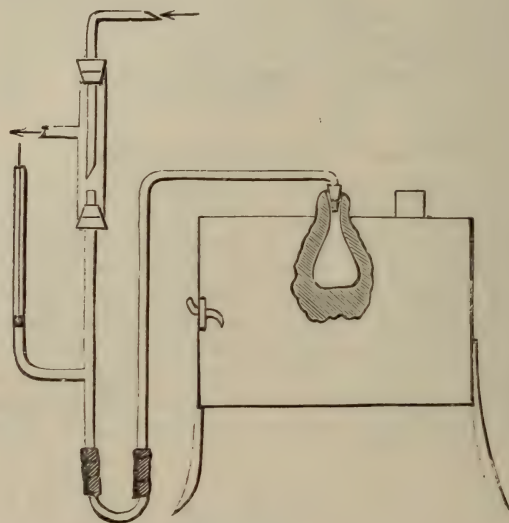
apology for calling the attention of your subscribers to an extremely simple and effective thermo-static regulator which has been devised by Mr. H. B. Wilson. There is no novelty whatever in the general principle of the apparatus, but it is no less practically useful on that account. I have recently fitted one in a room where carbon

tissue is dried, and it has proved very valuable, as the constancy of temperature resulting from its use has materially assisted in lessening the proportion of failures in printing. Mr. Wilson thus described the apparatus.

The empty flask, which is placed inside the drying-cupboard or room, must vary in size according as a higher or lower temperature is to be maintained, and it may have a capacity of a few ounces or several gallons. It is connected, air-tight, with a U-tube, the

larger portion of which is filled with mercury. Instead of using a continuous glass tube bent at the proper place in the flame, it is sometimes better to use straight tubing for the longer pieces, and to attach a short U-piece with stout rubber joints.

When the air inside of the flask becomes expanded, it depresses the mercury in the inner, and raises it in the outer limb, until it more or less completely cuts off the supply of gas, which passes in the direction of the arrows.



The outer tube bears a lateral branch into which a piston, made of a knitting-needle and a disc of leather, fits. By pushing this down a certain distance, or by raising it up, so as to draw some of the mercury over into the branch, the temperature at which the mercury would otherwise cut off the gas may be varied at any time.

The arrangement is very easy to adjust to the required temperature, and is only subject to variation by the fluctuations of barometric pressure; but this may be disregarded in most instances.

A New Lens.—Herr Moritz Mittenzwey, of Zuickau, has recently patented a new lens for which he claims very considerable advantages. Although a single combina-

tion it is constructed to work with an aperture of $f.3\frac{1}{2}$ or about the same as an ordinary rapid portrait combination. Generally speaking the spherical aberration of a single lens is so great that it is not considered advisable to work it with a larger aperture than that corresponding with one-twentieth of the focus. Several developments of the same idea are described by Herr Mittenzwey, but the following figure represents that which is most characteristic. The front glass and the back are both of crown, while the central one is of flint; but in one of the variations this is reversed, and the middle lens is a strongly convergent crown, whilst the front is a very slightly convergent meniscus, and the back is powerfully divergent, both of flint.

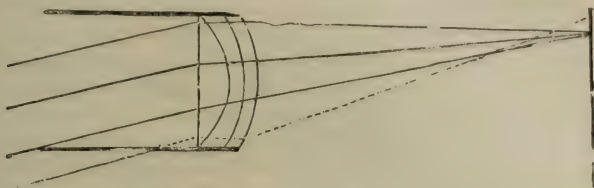
In the lens illustrated the curves are given as follows :

First surface,	plane.
Radius of the second and third surfaces,	36.66 mm.
Radius of the fourth and fifth surfaces,	64.00 mm.
Radius of the sixth surface,	73.00 mm.

This is for a lens of 168 mm. focal length and 50 mm. diameter.

The indices of the glass are—

	Crown.	Flint.
Index of refraction for optical rays,	1.52000	1.62500
Index of refraction for chemical rays,	1.53400	1.65300



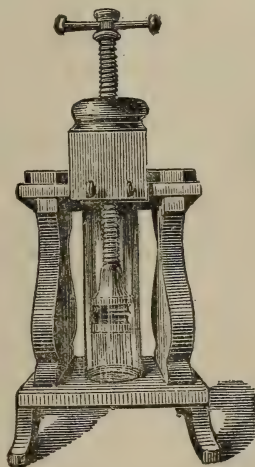
The lens is set back in a tube, and the effect of this is to act to a certain extent as a diaphragm. The lens will not therefore, when used with its full aperture, work at its calculated speed anywhere but in the centre of the field. It must be remembered, however, that this is also true of the ordinary portrait lens, the components of which are separated by being mounted at the two ends of a tube. The object in the present instance of using the tube which acts as diaphragm is to cut off those rays the spherical aberration of which it has not been found possible to remedy. The dotted line shows the aberration that would exist with oblique rays if there were no tube or stop.

The lens figured is, as a whole, plano-convex. One of the other forms described is a rather flat meniscus, and the other, which is called a group lens, a tolerably deep one. This latter instrument is constructed to work with an opening of f_9 , or about at the same speed as the most rapid lenses of the rapid symmetrical type.

A Dividing Press or Syringe for Emulsion Workers.—An arrangement devised by Lieutenant David of Vienna deserves notice; and it is especially available for those who have to make large quantities of emulsion.

It consists essentially of a strong tube or cylinder of glass open at both ends and by means of a wooden framework, which is separable into two parts by undoing the

thumb-screws shown in the figure, it is clamped down upon a disc of wire netting, having a needle of about one-twelfth of an inch; this sieve or disc of wire-work being



plated with silver, or preferably made entirely of this metal. The rest of the apparatus requires no particular explanation, but it may be mentioned that the piston screws are of hard wood, a rubber ring being fitted to the central groove of the plunger in order to make the fit sufficiently good. A porcelain basin is placed beneath the frame-work to catch the threads of emulsion.

The Influence of Civilization on the Eyesight.—Mr. R. Brudenell Carter, the eminent oculist, has published a memoir in

which he contends that the strain of modern civilization tends in a remarkable way to affect the acuteness of sight, such occupations as that of the photographer being especially calculated to injure the powers of vision. Dark room work must be exceptionally bad, one would think it, as Mr. Carter says, "badly lighted schools are the great manufactories of myopia, the bad light compelling the approximation of the books or the other materials of study. As an instance of the acuteness of vision among savages Mr. Carter refers to the following circumstance mentioned by Humboldt. He and those who remained with him approached an appointed meeting place, and he remarked to the Indian guide that he wondered what had become of the others. The guide looked at him with some surprise, and pointing across a wide mountain gorge, one side of which they were traversing, replied—"There they are." Humboldt himself could see nothing but rocks and verdure; but ultimately, being assisted by the guide as to the position of the other party, succeeded in discovering them by the aid of a telescope; and then, by making the guide describe the order of march and the relative positions of the several individuals, obtained proof that he actually saw them plainly with his unaided eyes. An experience of equal significance, if of less striking character, may be had in any Highland deer forest, where deer which are conspicuous to the eyes of the keeper can only be seen with difficulty and uncertainty, and after much pointing out of neighboring landmarks, by visitors who are habitual dwellers in towns.

Although Mr. Brudenell Carter recognizes an evil, he suggests no remedy.

Making Negatives from a Print on Albumenized Paper.—If the process recently described by Mr. W. F. Wilkinson is all that he says it is, the satisfactory reproduction of negatives is now an easy matter; and, in addition to this, to obtain a satisfactory reproduction one does not require to possess the original negative, but only a good ordinary proof from it.

"Take your silver print," says Mr. Wil-

kinson, "and if it is rather a dark one, so much the better." Place it face downward on a piece of clean blotting-paper and well rub the back with a piece of rag saturated with olive oil until the print is thoroughly saturated. Next clean away the superfluous oil from the front and back and warm gently before the fire. To make a good negative from the oiled silver print one has only to make a contact print from it on a gelatino-bromide plate or a piece of carbon tissue. Waxing the original print, will not do nearly so well as oiling, Mr. Wilkinson says, and the principal source of failure is the tendency to leave off applying the oil before it has thoroughly saturated the paper. Sometimes it is well to remove as much as possible of the sizing from the paper before oiling. Hot water removes the sizing very effectually, but care must be taken to thoroughly dry the print before oiling.

A New Developer.—Messrs. Carl Egli and Arnold Spiller communicate to the *Photographic News* the fact that hydroxylamine, when used in conjunction with caustic soda or potash, makes an excellent developer for gelatino-bromide plates. Hydroxylamine is hardly an article of commerce just now, only one firm in London keeping it in stock; but if a demand should arise for it we may expect it to become cheap or cheaper than pyrogalllic acid is at present.

Messrs. Egli and Spiller say:

Hydroxylamine, NH_2OH , was obtained by Lossen when examining the intermediary products in the reduction of nitric acid to ammonia by means of metals. It is generally considered as ammonia in which one atom of hydrogen is replaced by the radical OH.

Ammonia.



Hydroxylamine.



The process adopted for its manufacture is the same as that originally described by the discoverer, viz., the reduction of the nitric ether by tin and hydrochloric acid. Hydroxylamine does not exist in the free state except in solution; but, like ammonia, it

forms several permanent salts, and it is in the latter form that it will be found most useful for photographic purposes. The salt used is the hydrochloride, a substance analogous to sal-ammoniac, and already in the market. As neither the base nor its salts alone have any effect on silver bromide, it is found necessary to add a fixed alkali such as soda or potash.

For the development of gelatino-bromide plates, we recommend the following solution :

A.—Hydroxylamine hydrochloride,	32 grs.
Citric acid,	15 “
Potassium bromide,	20 “
Water,	1 oz.
B.—Caustic soda,	1 dr.
Water,	1 oz.
C.—Potassium bromide,	20 grs.
Water,	1 oz.

For a $7\frac{1}{2} \times 5$ plate the film is first soaked for about one minute in three and a half ounces of water containing one dram of A; about twenty drops of B is then added, and if necessary, an extra ten or so. Should the image show signs of over-exposure, or if the plate is one of the specially sensitive kind, a few drops of C must be used to restrain the action still more. The advantages resulting from the use of this developer are the following :

1. The image is of a *wet plate* tone, perfectly free from stain or deposits.
2. A great variation of exposure is permissible.
3. The solution is not acted on by the atmosphere, and therefore does not deteriorate during development from external causes.

Photographing on the Wood Block.—This is a matter which has been much discussed, but the principal objection which wood engravers have found against the work of the photographer have been that a film is generally present, or that the quality of the wood is destroyed by the liquid used. The difficulties of the case are exhaustively summed up in a recent article in the *Photographic News*, and it is suggested that a method according to which oxalate of silver

is rubbed over the block—suggested more than a quarter of a century ago in that journal—appears likely to prove of more practical value than the more modern methods.

The following extract embodies the substance of the remarks.

When talking over this matter the other day with Mr. Werge—who is an old wood engraver—some surprise was expressed that among the more or less novel methods of making photographic pictures on the wood block which are being so frequently brought forward, so little attention should be given to one of the earliest modes of procedure, and one which is completely free from the objections that have been mentioned. The method referred to is one which was suggested in our editorial columns in 1858—over twenty-five years ago, and it consists in rubbing the face of the wood block with a pasty mixture composed of oxalate of silver and water, a trace of gum being added if required. Supposing that the block is four inches square, it is sufficient to take as much of the oxalate as will lie on a three-penny-piece; and after having sprinkled this on the surface of the wood, to rub it well in with the tip of the finger; a trace of pure water or thin gum being applied to the finger from time to time.

The amount of moisture communicated to the block during this process need not be more than is involved in the usual process of facing with white pigment, and is altogether insignificant. As soon as the coating with the oxalate has been finished, the block may be exposed at once under a reversed negative, and the prepared block may be stored away in a dark place for future use. In order to increase the sensitiveness of the oxalate, it is well to slightly fume the block with ammonia, just in the same way that albumenized paper is fumed (see present volume, page 346). If both negative and block are carefully registered into one corner of a deep printing-frame, it becomes practicable to remove the block from time to time, so as to watch the progress of the exposure.

If the engraver is to work by lamp-light,

no fixing or further preparation of the block is required, as the oxalate of silver does not darken to any notable extent under these circumstances; and even if the engraver does his work by daylight it is quite practicable to cover the block with a mask of yellow paper, and just to tear this away piece meal as the work progresses. At any rate, this is the experience of Mr. Werge, who had worked practically with the process.

Some recent experiences of our own show, however, that it is quite easy to so far desensitize the adherent oxalate of silver as to render it unnecessary to take any special precautions for screening the block from the light while the engraving is in progress.

On removal from the printing-frame, the block is fumed with hydrochloric acid for a few seconds, the most convenient method of doing this being to pour a little of the strong commercial acid into a flat dish, and to support the block over it—face downwards, of course—by means of a couple of glass rods, or in any way which may be convenient.

Another, and perhaps more complete mode of de-sensitizing the oxalate, is to slightly moisten a sheet of blotting-paper with a saturated solution of common salt, and to lay this paper on the face of the block; contact being established by a pad and weight. Ten minutes are generally sufficient, and the block need not be dampened nearly so much as it would be if a drawing were made upon it with washes of India ink.

The Exhibition of the Photographic Society of Great Britain.—This—the principal annual show of photographs in Great Britain—opens on the day when I post this (October 4th). So I will content myself with jotting down a few general notes.

The collection of apparatus is an extensive one—but there are no very notable novelties among the exhibits, still the tendency is towards better and more finished work; photographers whether amateur or professional finding the advantage of using the best that can be made.

The pictures as a whole are quite up to

the average—perhaps above. Among the medalists may be mentioned Vittorio Sella, who sends four large views of snow and ice in Switzerland; W. P. Marsh, whose sea views with the boldest of the bold foam and spray clouds, which rise apparently to a height of 60 or 70 feet in some instances; Robinson, who shows among other subjects a charming study of "The Mill Door." The scene is the taking away of a sack of flour on the back of a donkey, but Mr. Robinson—as he alone can do—invests the incident with interest. Sinclair's picture, a "Peep at Derwent Water," enlarged to about four feet base by the Autotype Company, is a striking picture of river and trees. Mr. A. G. Tagliferro sends a frame of pictures showing the riches of the old Cathedral of St. John at Malta; these as photographs are magnificent, and much interest attaches to the church in question. "Mother's Love," by I. Hubbard, shows an anxious mother leaning over the cradle containing her infant; the expression of anxious and long care is well realized. The yacht studies of West & Son, if anything, surpass those of last year, and the medal given to them is well bestowed.

Removal.

MR. H. A. HYATT, of St. Louis, removed on the 20th of this month to new and elegant quarters on the corner of Locust and Eighth Streets in that city. The location is opposite the new Custom House and Post Office. It is said to be one of the nicest and pleasantest stores of its kind in the country. He occupies the entire three upper stories. With plenty of room, great enterprise, a fine assortment of materials and a large list of customers, Mr. Hyatt is evidently about to make another bold and successful step forward. He has also just printed a 128-page catalogue of frames, mouldings and fancy goods, which he will be happy to mail to any address in this part of the world, no doubt.

AUG. and SEPT. BULSETINS are all gone.

Report of the Photographic Section of the Amer. Institute.

NEW YORK, Oct. 7, 1884.

PRESIDENT NEWTON in the chair.

Mr. MASON. I have received ANTHONY'S PHOTOGRAPHIC BULLETIN for September, a copy of *The Eye*, to which your especial attention is invited, and these documents relating to the forthcoming American Exhibition in London in 1886. I have not had time to read them.

Mr. NEWTON. Before proceeding to the report of committees, it seems to me that some special action should be had in reference to these papers with regard to the Exhibition in London. The subject, however, can be left until our next meeting, as no great haste is necessary. The Secretary may then bring it up.

Mr. MASON. I would therefore suggest that two or three gentlemen be named to consider the matter, and that the Secretary be authorized to reply that a committee had been appointed, to show that we have received the communication. Motion made and carried.

Mr. GARDNER: The Executive Committee, in selecting for this evening's programme "Photographic Literature," had chiefly in view the commendation of such books on photography as are especially worthy of perusal, and which if not already in the library of the Institute should, if possible, be placed there. Taking it for granted, that all are more or less acquainted with photographic authors, it is the purpose of the committee to give each one present who feels any interest in the matter an opportunity to speak of the merits or demerits of any special book with which he has made himself familiar, and which he may deem worthy a place in the library of the Institute.

As there is no end to the making of books, so there is no end to the talking about them. Hence the Committee have selected no special subject, but recommend the continuance of the same theme at the next regular meeting in November. It will no doubt be conceded by all that the American Institute should have the most complete photographic library in this country, or perhaps, in any country, and the Institute will no doubt avail itself of this honor, providing its attention is properly called to it. Any photographic books, therefore, that are not already in the library will no doubt, so far as possible, be placed there on

the recommendation and unanimous vote of this Section.

Mr. GARDNER then read the following:

Photographic Literature.

MR. PRESIDENT AND GENTLEMEN:

There are, perhaps, very few photographers who have been so fortunate as to grow rich by the simple practice of their profession, but there is a less number who have made even a living by writing for the craft. Hence the literature of photography is the offspring of love rather than of profit.

Numerous examples might be given of photographic writers (of more than ordinary ability) who never realized a tithe of the actual cost of their labors, and hence were obliged to turn their attention to more lucrative fields of usefulness. Thus the practical photographer lost the best class of talent that could be employed in building up and dignifying his profession; and was left with no scribe to record his works, save such as were even less competent than himself, and who often proved a hindrance rather than a help. To whom, then, shall we lay the blame for so much bad writing? not bad, perhaps, so much from a literary point of view as from the want of a practical knowledge of the subjects treated.

Is not the photographer the chief cause of this trouble? Is it not because he has withheld his support, or given little or no encouragement to writers of talent and ability?

Is there not a large number of photographers who never read anything photographic, who try to be content with their own limited experience, and vainly imagine themselves wiser than all their teachers?

If these only were to be depended upon there would be no such thing as photographic literature. But in spite of this indifference there has been inaugurated a literary element that compares favorably with the early literature of either science or art.

And to whom are we mostly indebted for this? The answer is plain to every reader of the enterprising and useful photographic journals now published in this country. There is no knowledge so cheaply bought, perhaps, as that from monthly periodicals, books, etc. The cost of a year's subscription is frequently more than paid for by the practical information contained in a single number; and the money expended for a book is often thrice returned by simply reducing to practice the contents of a single page.

But books are not only an aid in money-making, but they tend to excite thought, awaken the imagination, and furnish the reader with a better vocabulary of words and forms of expression. But the photographer is often heard to say, "I never find anything practical in books! and as for monthlies, they are mostly made up of flaming advertisements!" Well, even if this were true; even if the books contained nothing but theories, it is no valid reason why the photographer should not read them. For all practical knowledge is first theoretical, and can only be evolved by trained and skillful writers and thinkers. Like the professional divine, it is their *business* to preach while it is the duty of the pupil to reduce to practice their instructions; and where both are equally expert in their work, all concerned are elevated to higher and better forms of usefulness. If the thinker or writer is wrong in his conclusions, it can be best demonstrated by the practitioner; and the errors of the latter can be best corrected by the judgment of the former. Thus theoretical knowledge and practical skill, like capital and labor, must unite their powers, or fail to render the highest service either to themselves or to the world; therefore there should be no antagonism between them.

But the practical photographer still objects, because so much space is occupied with nothing but advertisements. But is this a valid reason why he should deny himself the pleasure of reading the portions that most concern him? Does he remember that no single one of these advertisements will fail to interest some one of his fraternity, and help, perhaps, to raise the profession to a higher plane? On the score of charity, therefore (even if there was no better reason), he should welcome the notice of everything useful to the craft. Has it ever crossed his mind that through this medium of advertising a knowledge is obtained of how and where to buy the cheapest and the best; that these notices speak only of such implements of his profession as require not only capital, but the perfection of inventive genius combined with the best executive skill, all of which he can avail himself for the smallest fraction of their original cost? Has he ever thought, while reading the literary portions of these journals and the reports of photographic societies, that he is indebted to the advertising columns for this pleasure and privilege? for without *these* there would be no revenue to publish the other. To take exceptions,

then, to these journalists tends only to expose the thoughtlessness of the critic and dampen the ardor of the publisher in his efforts to instruct and entertain.

Now on whom are we to depend for the photographic literature of the future? Surely not on professional photographers! for even if they have the mental ability, they have neither the time, the money, nor the disposition. It is one of their means of success, or they think it is, to keep what *they know* for their own personal benefit, especially such of them as happen to be a step in advance of their competitors. It is true that these leaders sometimes publish formulas and modes of working; but they are generally such as they have abandoned for better ones; and in this way is put on record the methods and processes of the past. From a historical point of view, these are useful, for they form really the basis of the art. Hence no student of photography can afford to neglect or pass them by unnoticed.

If we can judge of the future by the past, it will be very natural to conclude that the most and the best part of photographic writing will be by the amateur rather than the professional photographer, the amateur, perhaps, whose business it is to write; who has an established reputation as an author either in science or in art; who not only has the leisure but the culture and means such work demands.

Since the introduction of the gelatine emulsion process this amateur class has been rapidly increasing both in numbers and mental ability; and therefore more may be expected of it in the future than all the honors and trophies it has won in the past. But however distinguished any of these may prove, the publisher will still be in demand; for authors as a rule are not expert business men. Who, then, can undertake this part of the work with any surety of success? Who but the photographic stock dealers would be bold enough to make such a venture? Who more likely to succeed than they? To no small extent, therefore, will the practical photographer, as well as the amateur, be dependent upon the commercial enterprise, business capacity, and extensive capital invested in all the large houses for the photographic literature of the future. It is by their generous contributions that our public libraries and photographic societies have been supplied with this special branch of literature, and to them therefore is due the hearty thanks of every true lover of the art.

Mr. PARTRIDGE then read the following paper:

Literature for the Photographic Library.

MR. PRESIDENT AND GENTLEMEN OF THE PHOTOGRAPHIC SECTION:

While having scarcely sufficient technical knowledge to speak with confidence of those works which must always form the foundation of every photographic library, my reading and study have been of such a character that I may perhaps be permitted to say a few words in regard to certain branches of literature intimately connected with photography, that have hitherto been neglected by the profession.

In the formation of a photographic library, after the acknowledged standard works have been provided, next on the list should be placed, as of quite as much importance, the technical literature published by the great stock houses. But a photographic library to be complete should contain not only all the text-books and brochures of various kinds that the dealers in materials, plate-makers, etc., issue, but should also include every circular, catalogue and price list published. These form a history of the art, which, as time passes, increases in usefulness. They put on record the thousand minutiae which cannot be obtained in any other way, and in after years become invaluable to the inventor, the reader and the student. So highly are they considered that all of the larger educational institutions devoted to engineering and mechanics make thoroughly organized efforts to obtain and preserve circulars, pamphlets, and even the newspaper advertisements of all houses engaged in manufacturing articles connected with the engineering and mechanical profession. Collections of circulars almost double their value every year. They present to the student an interesting history of invention and science of incalculable value. Had such collections been made from the beginning, vast numbers of worthless patents would have been strangled in the patent office, and immense amounts of money expended for re-inventions would have been saved.

When we take up the subject of what the photographer should read and study outside of purely technical literature, we are met with the question as to what the photographer should be; and this of course immediately raises that old and threadbare question—"Is the photographer an artist? A short method of answering the question (which, however,

sounds like an absurdity), is by saying that it depends upon whether he is an *artist*. The same question was formerly asked in regard to the lithographer, the steel engraver, the wood engraver, the draughtsman on wood or stone, and lastly in regard to the chromo-lithographer. The world has at last recognized the fact that the answer depends entirely upon the man, and not upon his trade. When a person using canvas and oil colors makes pictures that command the attention and admiration of the world, he is recognized as an artist. If he uses clay or marble, producing work utterly different in character, but of equal rank, he is no longer a stone-cutter or modeler in plaster, but is elevated to the same dignity. When upon the stage a man in his representation of human passion and feeling reaches a certain plane, he is no longer the mimic of the minstrel show, but claims and receives by universal assent the title of a histrionic artist. It is no longer a question whether the play actor, stone-cutter, or lithographer is an artist, but the man himself. The application is almost too evident to be spoken of. If the model is selected, the drapery arranged, the light and shade regulated in such a way as to produce a work of art, it makes no difference to the public whether it be a fugitive tableau on the stage, whether it be made eternally enduring in marble, transferred to canvas in oil, or caught by camera and reproduced by the solar ray. If the results are works of art, the head that produced them by universal consent will wear the artist's laurel.

With one of the wide departments of the realm of art open to the photographer the question arises—"How shall he enter it to the best advantage and gain the crown which he desires?" As his work is pictorial representation, very naturally he finds himself bound by the same rule as the painter. And as he has before him the possibilities of many subjects, he finds himself bound by most of the limitations of pictorial art, and to be successful must study those rules that have been formulated from a study of the best works of the past. The person, then, who is to become a photographic artist, must study art in very much the same way as the painter. As his methods are entirely different from the *technique* of the painter, they will be of necessity peculiarly his own. But all that goes to make a picture—the posing of figures, unity of outlines, the arrangement of drapery and incident, the light and shade, and, in a word, the

composition, should have the same study and the same ideal as the painter.

Under such conditions it is at once evident that the library for the photographer must embrace a vast number of works of a purely artistic character. Both his books and periodicals should be selected with a view to the art as well as to the technical side of his profession. His studies, like those of the painter, must be arranged on a broad basis, and he will find that he cannot increase his artistic or technical knowledge to such a degree as to make it burdensome. To the artist an excess of knowledge is not possible. Taking it for granted that the photographer is to be also an artist, I may venture to suggest some of the books which a complete photographic library should contain. It will of course be understood that the foundation has been laid, and all the essential technical works have been secured. Before passing to works on art, I may mention a few of the scientific books which are indispensable. There should be at least two good works on chemistry. *Payne's Industrial Chemistry*, and also *Roscoe's*, ought to be on the list. *Watt's Dictionary of Chemistry*, *Muspratt*, and a late edition of *Ure's* work should be included, if there are sufficient funds. *Spon's Workshop Recipes*, *Dick's Encyclopedia of Recipes* and *Poole's Dictionary* are all needed. In forming a library of this kind, I should certainly add the *U. S. Dispensatory*. It contains a fund of information in regard to chemicals, chemical manipulation, etc., which cannot be found elsewhere, and which would be invaluable to the photographer. But these works do not belong to the class of which I wished to speak more particularly. *L. Vidal's* work on *Industrial Reproductions*, in French, occupies an intermediate position between the artistic and practical books. It is the most comprehensive of anything yet published, and it is a pity that a good translation has not been made into English.

Elementary hand-books on art are very essential; and as there is a dearth of teachers, we cannot do better than to take such instruction as can be obtained from books. Messrs. George Rowney & Co. and Windsor & Newton, both of London, publish series of hand-books on various subjects, which form an elementary art course. Their cost is so small that I should recommend the purchase of the whole list, even though several of them are devoted to purely technical subjects connected with the art of painting and drawing. Even

these would not be wholly without their use, as many photographers have portraits to do in oil or pastel, and they are artists in the broad sense of doing all kinds of work.

Philip Gilbert Hamerton's *Etching and Etchers*, and also his *Graphic Arts*, are books that should find a very important place in the library. They give glimpses of art seen from the artist's standpoint and with the artist's eyes. Above all things they are suggestive works, and will do something towards teaching what to see and how to see it.

Learning to Draw, by Violet le Duc, though written in the form of a story, is a book that will stimulate the perceptive powers and do much toward teaching the art of seeing. These last three works mentioned cover the whole subject of composition and the art of picture making. As they deal largely in principles, and are by men of the highest attainments, they should be carefully studied and digested.

If time permitted I might specify a large number of manuals that are included in the lists I have given, but as they should all be found in the library I will omit further reference to them, and mention some of the books that are not likely to fall in the way of the photographic artist, but which he should certainly have an opportunity to study. Dr. Christopher Dresser's *Principles of Decorative Design*, and his *Studies in Decorative Design*, are standard works, and even a hasty perusal of them would save many a photographer from making mistakes in setting accessories which are common and so exasperating to the real artist.

F. Loyd's *Practical Guide to Scenic Painting* will be useful to those who experiment a little in making their own backgrounds. It is a curious work; the only one on the subject, so far as I can learn, that has ever been written, and moreover very interesting in its way.

R. P. Leith's *Sepia Painting*, as well as his *Painting in Neutral Tint*, should be in the library. Both are full of excellent studies.

It is too much to ask for Owen Jones' *Grammar of Ornament*; but if it could be within the reach of the student, much good might be expected from its study. Its great cost, \$50, for the American edition, puts it beyond the reach of any but the richest institutions.

Next to good books as a means of study we must place good pictures. To some extent the picture should come first, as instruction through the eye is generally easier than through the

understanding. In these days, when fine engraving has become cheap and common, the illustrated magazines become an endless picture gallery. At the head of the list of these which should be in the library should be placed *L'Art*, the great French art journal. This should be obtained, even though its high price exhausted the appropriation and no other magazine was taken. Next to this should come the *Gazette des Beaux-Arts*, also French. I place these journals first as they contain the best, most instructive, and most original pictures of any magazines that come to this country. The *English and American Architectural* magazines contain a fund of art information and suggestions which, together with their beautiful illustrations, make them very valuable. The *Architect*, English; The *American Architect and Building News* and one of the French architectural journals should be on the list. The name of the latter is not at hand. A study of these works may be looked upon in the light of strictly professional work. A knowledge of architecture is very important to the photographer, to enable him to seize upon the best features of a building, and select the best day and hour for the photograph. The picture of a building is not to be taken by setting the camera down in the most convenient spot and making an exposure. The expression, best features, and best lighting must be studied quite as much as in portraiture.

The list given might be indefinitely extended; but I presume the books I have mentioned will be more than sufficient to exhaust any provision that may have been made for the library of the Photographic Section at the present time. If the question is asked me which of these books are the most important, I should answer unhesitatingly—those upon art, and especially those relating to the higher branches of art. The others are merely in the light of text-books, and are especially for the younger members. The educational influence, however, of the finer art works extends everywhere; and as every photographer must have a certain number of text-books, he feels his greatest want not in the elementary but in the more advanced branches of his profession.

Dr. EHLMANN. In photography we are compelled to rely upon certain auxiliary sciences, one of which Mr. Partridge entirely omitted, that is, physics. He mentioned chemistry, but I think it is absolutely necessary that the library should also contain a book on physics. I would also recommend the *U. S. Dis-*

persatory, and for use of the practical photographer *Hunt's Essays on Light* should be added.

Mr. PARTRIDGE. That suggestion is a very important one, and had I attempted to make an exhaustive paper I should have included them also.

Mr. BOGARDUS. I had prepared a little speech for to-night, but these gentlemen have said just what I intended to. I feel that we cannot know too much about photography. It is but a few years ago comparatively when works on agriculture were almost unknown.

Some years ago the old farmers laughed at book-farming, as they called it; they said it would not do. And yet the agricultural publications continued, stating what kind of fertilizers were adapted to certain kinds of soil, etc.; and to-day the intelligent, well-read farmer is far in advance of the old foggy who still follows the old rut of his grandfather without the great benefit of the practical information published. So in photography; the man who keeps posted by a careful reading of the very excellent matter supplied by the photographic publications and books of the day is sure to be well informed, and will eventually succeed better than the mere routine worker. He may never be a successful manipulator; all men are not good workers in any trade.

One of the great troubles of to-day is that almost every operator thinks he knows it all, and he is about the only man that does know it. No need for him to read photography. He is able to *give* information, not to *receive* any; HE is full. Now that man will find himself outdone some day, if not completely "g'n eout."

We have several monthlies devoted to our art; and now a Chicago man gives us a weekly, and you will find it a good thing to keep an *Eye* on that. And who knows but what we may soon have a daily, perhaps morning and evening edition, after the election is over and the staff are done writing lies about the candidates. I may yet live to hear the boys calling out an "extra—great discovery by Professor * * * —photographs in their natural colors!"

Speaking of colors, photographers as a rule know none except black, white and grey. I hope we will never be color-blind, as the old lady said her daughter was when she ran off with a colored man. I don't know whether he was a coachman.

It is not possible to have new things all the time in these journals; but you get something

to compare with something else, and putting this and that together is the only way. In these journals we get the different ideas of different men. It is impossible to attend one of the annual conventions without learning something. So of the publications; you get the ideas of many. I have never been afraid of knowing too much.

What I do not know you may. I think the fraternity as a whole have not patronized the works of the day as they should. I do not want to brag, but I have never been without a photographic periodical since I commenced the business. The first one I had was *Humphrey's Journal*. The first time I saw the picture of a negative was in one of those early journals. On one side of the page it showed how the negative looked, and on the other side how the positive looked. It was considered a wonderful thing. When two daguerreotypes of a person were wanted they had to sit twice. There was no process by which we could multiply impressions.

The literature of the art to-day is such that I would recommend every young man to study it well and get all the information he can.

Mr. McGEORGE then read the following paper:

Photographic Literature.

MR. PRESIDENT AND GENTLEMEN:

Five minutes are allotted me for a resume of photographic literature. Fortunately the gentlemen who preceded have ably afforded you the facts, and I shall therefore only briefly summarize a few odd fancies for your amusement, on the subject more particularly of English journalistic literature as compared with our own.

Twenty-one years ago, so far as I can remember without referring to dates, photography was thus represented by three journals in England and two in America, the former being *The British Journal of Photography*, *The Photographic News*, and *Sutton's Notes*; the latter, by *Seeley's American Journal of Photography* and *Humphrey's Journal*—*Snelling's Art Journal* having already become extinct. The two English journals named still continue their weekly issues, very much in the same old way; so much so, that if anyone were (a la Rip Van Winkle) to wake from a long slumber, he would readily recognize them to-day.

The American journals of that period, though full of promise then, have long been

numbered with the dead. What led to their demise I never knew. Possibly it was occasioned by a trifling loss of *interest* on the part of the publishers, or a little lack of *principal* on the part of some of the subscribers. But with our plodding cousins yonder the twain above enumerated still remain, and probably ever will. What need of more? Why, bless you, gentlemen, the weekly over there on which I began my apprenticeship had flourished a couple of centuries before I lent my youthful aid. But to return to more modern times. The *Philadelphia Photographer* came next—a nice, eminently respectable monthly magazine, handsomely illustrated and provided with the richest *pabulum* America possessed. It was a clean, clear and capital investment, and is probably a *safe* one yet. It is what we printers technically call a good fat job, that is, it is "leaded," not like those "lean, solid forms" across the water.

And then came an innovation—the BULLETIN, ANTHONY'S PHOTOGRAPHIC BULLETIN, which strove to give the best the world afforded to all, and does so still. Prior to that an American Photographic reprint had no inception; but its usefulness was soon apparent, and hence there followed a veritable army of that ilk—*The Photographic World*, *The Photographic Times*, *The Western News*, *Waltz's Photographers' Friend* (Waltz's *Monthly* now), *The St. Louis Photographer*, *The American Journal of Photography*, *The Bureau of Information*, *Photography*, and we know not how many others. Of this number many yet survive, so that while Brother John can only boast of two photographic journals Brother Jonathan has eight, distributed as follows: Two in New York, two in Philadelphia, two in Chicago, one in Baltimore and one in St. Louis. Yes, gentlemen, there are published in this country to-day eight enterprising, independent photographic magazines, each enjoying a countless *clientele* and marvellous prosperity! What must be the feelings of our *confreres* yonder who have only two! But a fruitful source of amazement to the writer is, that no one in England should think of issuing a reprint of American photographic literature; why not? See what the Harpers and the Scribners do! Can we not at least emulate them and ship unbound sheets or plates abroad? And mark our independence. Examine the reports of these meetings and compare them. Why if one photographer uses anybody's red label cotton, for instance, or

an I. O. C. camera, another need not and the amiable editor has the option of *enhancing* the reputation of something else or of declining to mention either, whichever he may elect; and no one is ever the wiser. And think of our liberality—one can say what he pleases almost, and still be respected. Yes, sir; perhaps a photographic journal, if established here and conducted on the European plan, would only make ye's laugh, as our Irish friends remark; but, on the other hand, a "real lively, go-ahead" photographic sheet of the genuine Western type might "take the cake" across the water.

One moment more; we are witnesses of the resurrection of amateur photography; may we not be the witnesses of the rise of amateur photographic journalism also? And then? In one generation more, judging a little by the past, we may have eighty well conducted and proudly independent journals where we now have eight. Truly they must look to their laurels yonder, for from appearances every photographer and dealer here may soon become an amateur journalist also, and one day issue his "flyer"—

To My Patrons.

And really, perhaps it should be so, for thus far the photographer has been almost exclusively indebted to the dealer for *all* his literature. One of the earliest, *Seeley's American Journal of Photography*, was founded by the eminent merchant chemist whose name it bore; *The Philadelphia Photographer* and *The World* by Wilson, Hood & Co. of Philadelphia; *The Western News* by Chas. W. Stevens of Chicago; *The Bureau of Information* by Douglass, Thompson & Co., his successors; *The American Journal of Photography* by Thomas H. McCollin of Philadelphia; *The Photographers' Friend* by Richard Walz of Baltimore; *The Photographic Times and American Photographer* by the Scovill Mfg. Co., and last, but not least, even ANTHONY'S PHOTOGRAPHIC BULLETIN by E. & H. T. Anthony & Co.

But seriously, we may well be proud of our photographic literature, for it is doubtful if in mass the treasured archives of this great Institute itself can exceed in volume the aggregated contributions of the press since the great revival. Ten thousand American journals stand ready to-day to publish the arcana of photography.

Mr. ROCHE. Speaking of the difficulty of obtaining the standard works on photography,

I looked through the Astor Library for a certain volume of the *British Journal* and *Photographic News*, and could find neither. There is no place in New York where a complete library of photographic works can be found, excepting in private hands.

Dr. EHLMANN. Germany published nine or ten photographic journals, some of them weeklies; Denmark one, Belgium two, France three, Portugal one; one in Hungary, published in the Magyar language, and one in Russia. I know there exists a book, which is probably the very first publication on photography; it was issued in this country in 1852.

Mr. MCGEORGE. There are others; one in Cuba is the BULLETIN's namesake.

Dr. EHLMANN. The week before last I was in Philadelphia, and I searched high and low for a copy of that book. I found one belonging to a gentleman, but he would not spare it.

Mr. Gardner seems to have some fears concerning the future of photographic literature. There can be no fear. The best way is to establish photographic schools. I made this suggestion before. It has not found favor in New York; but in Philadelphia I understand that during the coming winter Franklin Institute will establish a school of photography. That writers on photography are solely among the amateurs I deny. With all due respect to the great knowledge of the amateur, the bone and sinew of the art lie among the professionals.

I do not speak in deprecation of knowledge and the good will of the amateurs; but we who make our living out of photography are possibly more interested than the amateur in its proper advancement. Mr. Roche, Mr. Bogardus, Mr. Gardner, Mr. Duchochois and I, who have been making pictures for nearly a lifetime, have a love for the art, and we are amateurs in a better sense than the so-called amateurs.

Mr. PARTRIDGE. I had hoped, knowing that Mr. Gardner was to speak before me, that he would take up one branch of the subject I felt unequal to. Mr. Roche has spoken of the necessity of a reference library purely photographic. I expected that he would have had a list or lists of those books which were essential in forming the foundation of such a library. The early history of photography ought certainly to be secured in that library. These books are going out of print—destroyed—and it is difficult to obtain complete files of the older publications relating thereto. As time

passes their value increases. After the older historical ones have been secured, those necessary in every-day work should come.

Mr. GARDNER. The president of the Association was one whom the committee appointed to speak on this subject. His modesty has kept him silent.

Mr. NEWTON. I was not aware that I had been appointed to say anything on the subject. I knew it was to be photographic literature, and in listening to the different papers I have been very much interested, especially in that part which sets forth that those who intended to make photography a business in order to succeed should understand art. It is impossible for a person to make a picture, unless by accident, except he understands art. He may make a beautiful negative, but still not be able to make a picture. I brought a book here to-night, a contribution to photographic literature published in 1856. Its price was \$25. This is the title page: "A Treatise on Heliochrome," or "The Art of Photographing in Natural Colors, etc., etc., etc."

The author of this book was a reverend gentleman, and if he had no better success in theology than in photography, I think that the sinners in his congregation would have been in the position of the man who after travelling two or three days among the scrub oaks of Martha's Vineyard came out where he started from. I will read one formula from it, which will show that there is danger in dealing with photographic literature, especially when you have no balance-wheel and a good deal of steam to run the machinery. There is danger of being wrecked and cast upon an enchanted island, and transformed into a photographic crank. Mr. Newton then read some selections from the work.

Mr. BOGARDUS. I knew the author of that work, and he was such a poor preacher that the people turned him out, and he took up photography as a last resort. That book he would only sell to men who had bought some of his former processes, and an oath had to be taken that nothing would be divulged before the purchaser received it.

Mr. NEWTON. It is no addition to the photographic library, any further than being a curiosity.

Mr. FARIS. Gentlemen standing high in the profession recommended the Hillototype. Every one intended to have their pictures taken by it when the process was perfected and in use, and our business was almost ruined for awhile.

Mr. GRENIER. I would like to say that in France there are seven photographic journals.

Mr. MASON. The committee wrote me to bring to the meeting a list of books relating to photography. To make such an one would require considerable work. I counted four hundred volumes in my library; and to give the author, date of publication and title page of each would be somewhat of a job. It is very hard to find a complete set of American journals, even those that are best known. A great many photographers take a journal, and after reading it throw it aside, and it goes into the waste basket. I presume it would be impossible to find half a dozen sets of them. I have spent some time and money in getting a complete set, and I lack but one number of all the American journals. One speaker has referred to the negative and positive, as shown in a publication. As a rule a man who intends to take up photography for pleasure knows nothing about a negative. If some of the plate makers would put in each box of plates a small negative and a positive, a man might know when he had a negative and when a positive. A great many plate makers publish a formula for the working of their plates, but do not say a single word about varnishing. Those who embark in photography are left in the dark on very essential points. About the schools of photography, there is a great deal to be done in that direction. How are they to be supported? The professional photographers will not support them. I am glad to know that Mr. Duchochois intends giving lectures on Chemistry before the Society of Operative Photographers. I believe there was a school of photography at a summer resort during the past season, and that it succeeded very well.

Mr. ROCHE. The picture of the negative and positive referred to was printed from stone. One is dark and one is light. The pictures in *Snelling's Art Journal* were made from paper negatives.

On the 12th of July last Dr. Piffard photographed the lightning out of his window while a very heavy storm cloud was passing over Long Island, and the lightning photographed itself. It broke out in several branches, and the reflection will be seen in the water. The picture, in my opinion, is entirely unique.

A GENTLEMAN. Here is a little plate-holder which perhaps some could make use of. It is very easily managed.

Mr. NEWTON. I will appoint as a committee to take into consideration this call for the photographic exhibition in London in 1886, to report at the next meeting, Mr. Bogardus, Mr. Mason and Mr. Partridge.

Mr. MASON. The committee is merely to bring the matter before the Section, to look over these papers and consider what this body should do, and notify our London friends what action has been taken.

Mr. GARDNER. Mr. Duchochois has a paper which was to have been read to-night on *The Action of Light on Silver Compounds*, that will be made the subject of the next meeting.

Mr. ROCHE. I possess two of the most valuable books on photographic patents. They contain every patent issued under the English government from the beginning up to the year 1870.

Adjourned.

Association of Operative Photographers of New York.

NEW YORK, October 1, 1884.

PRESIDENT BUEHLER in the chair.

The minutes of the previous meeting were read and approved.

PRES. BUEHLER. I have received from Mr. Moreno a letter written in German, the substance of which is, that were it not for his inability to speak the English language he would participate in the meetings with great pleasure. He sends specimens of cloud photographs, which were used in the illustration of ANTHONY'S BULLETIN, and the negatives.

Mr. POWER. I understand that Mr. Moreno has been trying to get a patent on this cloud effect, but has not yet procured one. He sends these photographs to the meeting to get our opinion of them.

Mr. BENDER. I cannot exactly see where the benefit of this cloud effect comes in.

Mr. BUEHLER. The clouds are painted on large sheets of plate glass, which are put in front of the sitter, and the clouds are taken direct.

Mr. O'CONNOR. You can get the same cloud effect by double printing. The only value in this is that you print it direct.

Mr. SCHADNER. The only benefit I can see is that it is something attractive to put in the show-case on the street; and if the public should take to and give a number of orders for them, I think there would be some benefit. It is very artistic, as all Mr. Moreno's work is;

but I doubt whether many people would want this kind of picture.

Mr. ACKER. I don't think a patent can be taken on a cloud effect. The same thing was made years and years ago by double printing.

Mr. O'CONNOR. These pictures are especially adapted for children in very light drapery.

Mr. NOTTERMAN. Mr. Moreno wanted to know if there was any improvement in these over those that have hitherto been made.

Mr. BUEHLER. If I wanted to make a picture with a cloud effect I would incorporate the cloud effect in the negative. In making a print with an additional negative, for each print I made I would have to shift my cloud negative to bring it in proper position. With *this* the whole is arranged at once. That is the real benefit in this cloud effect.

Mr. O'CONNOR. The majority of cloud pictures I have seen are not really cloud pictures, but look like a coming storm. They are adapted for public work in particular.

Mr. SCHADNER. With a great many of these ideas and patents we think we have something wonderful at first, but often they prove worth very little. It was the same way with Atwood's reversible frame. I doubt whether five galleries in the city use it.

Mr. BENDER. I have found that frame takes up a good deal of room, where the other did not.

Mr. SCHADNER. Can the cloud effects be made better by double printing than in this way?

Mr. POWER. Undoubtedly. These are too artificial; not natural enough.

Mr. BENDER. I consider that when you make a picture that is a picture you want the portrait, not the surroundings.

Mr. POWER. I think you are wrong there. If you go into Sarony's or Mora's gallery, they do not care for the portrait so much as long as they have a nice looking picture. They retouch the picture so much that the portrait is not known.

Mr. ACKER. We make very few of those cloud pictures.

Mr. BENDER. The old way of using the cloud negative and double printing is the most practical one.

Mr. POWER. If I received numbers of orders for pictures made in that way, I should prefer it.

Mr. O'CONNOR. You never will have very many of these orders. Sometimes when I

have an order for babies' pictures with very light drapery, I print one or two with cloud effect, and put them away, and sometimes they are bought as something pretty. I have even gone so far as to say if people wanted these pictures made, that they would be \$16 00 a dozen.

Mr. McGEORGE. Mr. Roche handed me this print, made by Dr. Piffard of this city on July 12th, 1884. It is one of the most remarkable ones of its kind ever shown. It will be seen the electric spark has not the appearance of merely a consecutively continuous line from the clouds to the horizon, but that there are branches jutting out from it. Just below will be seen a reflection in the water of the same spark. The opposite coast line is also seen, and in good strong light the shore line and conformation of the trees and other objects are visible. Mr. Roche has produced something similar, though not nearly so remarkable a specimen as this. The camera, I believe, was arranged in anticipation of a thunder storm, the plate being kept ready for exposure, and when the flash of lightning came Dr. Piffard simply liberated the shutter, and afterwards developed the plate. This Mr. Roche considers to be far superior to anything of the kind that has been shown either abroad or at home. In the English journals you will find an account of something similar, but this would seem to be quite superior to it. The picture was made near Greenwich, on Long Island Sound.

Mr. BENDER. How can you tell from what part of the heavens the lightning is going to strike?

Mr. McGEORGE. I have often observed that lightning of that kind is generally successive. And though it is currently believed that lightning will never strike twice in the same place, electrical discharges will often succeed each other in a very similar locality during a passing storm.

Mr. SCHAIDNER. He must have had a very sensitive plate. I have been trying to make instantaneous pictures in the street, and up to the present time I have not made one.

Mr. POWER. Seven years ago down at Ocean Grove, a gentleman by the name of Hammenstede with a wet plate took a picture of the ocean on a cloudy day in September, just before the season closed. He exposed it like a flash, and it was over-exposed. I would like to know why that could not be done now? I admit that some of the dry plates print quickly enough, but often we re-

quire customers to resit several times, and if they give an order they must wait till Christmas to have it printed.

Mr. BUEHLER. I would like to say that Mr. Hammenstede's subject was one of the easiest there are, that is, views of the ocean. The amount of light is so immense that even by the wet process and with a rapid lens you can get an instantaneous picture. It is entirely different with the skylight, where a certain amount of light only is at your disposal.

Mr. POWER. But the clouds were black, and there was no sunlight. It had only just stopped raining. And if such quick exposure could be made there why would not the skylight, with the sun shining into it, give better results?

Mr. BUEHLER. The diffused light on the sea is greater than you can get in the skylight.

Mr. BENDER. Mr. Schaidner, who works where I am employed as an operator, has made large pictures on wet plates in a remarkably short time.

Mr. SCHAIDNER. I have made a 14 x 17 picture in seventeen seconds on a wet plate, full figure, light drapery, day not too bright, using a Dallmeyer Rapid Rectilinear lens.

Mr. BENDER. What is really the benefit of dry plates?

Mr. SCHAIDNER. I have worked a year or so with dry plates and was opposed to them. Some of them are good and some bad. It was the custom if a plate turned out badly to say it was the manufacturer's fault, and send the plates back. I have found out that when a man does not make a good picture on a dry plate it is generally his own fault. I have trouble with them myself occasionally, but I believe that I had done something wrong, and it is not the plates that are in fault.

Mr. BUEHLER. I have had dry plates that were absolutely bad.

Mr. SCHAIDNER. You may have had a box of plates that were light-struck.

Mr. BUEHLER. Dry plates are better now than at the beginning, but sometimes you get a batch of plates that do not work at all. I have had them of one emulsion which worked well, and I have had plates from the same source of a different emulsion which did not work at all.

Mr. BENDER. I find that if I take a wet plate, a good strong negative, not dense, with good printing qualities, I can make two prints from it before I can make one from a dry

plate. I never yet had a dry plate that I could get the same result with as from a wet plate.*

Mr. EDDOWS. I think the advantage of the dry plates is more in the skylight than anywhere else. They admit of greater rapidity than the wet plates in handling the subjects. You can get your subject in position and make the exposure while you are simply making an exposure with a wet plate.

As to printing, I find very few orders that I cannot finish in two good days, and often we can finish the entire dozen in one day. I find that the greatest trouble is from carelessness in timing the plates, and also in the use of the developer. If these two points were attended to carefully I have no doubt there would be no trouble.

Mr. BENDER. As long as that yellow color remains on the dry plates they are not good.

Mr. EDDOWS. We never have that yellow color on our dry plates. We had at first; but now it is a bluish tint.*

Mr. BUEHLER. Soda development is very apt to give a yellow tint.

Mr. ACKER. You cannot retouch on a dry plate as on a wet one.

Mr. EDDOWS. I had a negative to retouch where one of the hands showed very badly, and the thumb of one hand was particularly bad; but when it was printed the defects could not be seen on the print.

Mr. ACKER. It must have been a very dark background. In a wet plate retouching can be done with a needle, no matter what the background.

Mr. EDDOWS. In a negative of a child, on one shoulder the dress projected upwards. It was a white dress; the picture had a vignette background, not very dark. The projection on the shoulder was taken off so that it could not be noticed in the print.

Mr. SCHMIDNER. I have no doubt that within a short time there will be some way of getting over this trouble. I think if a certain liquid were applied to the gelatine plate it would take out spots as well as scratching with a needle. If you take a dry plate after it has been developed, before retouching, and wet the plate and let it drain for about a second, then dip the brush into the reducing agent and touch the different parts of the negative that need it, you will find that in the print those places came out all right.

Mr. EDDOWS. I had some experience with the autotype process. We had to strip our negatives lengthwise. Our retouchers found they could work as well on the collodion side as on the gelatine. The gelatine film being somewhat of the nature of sponge, does the retouching agent not spread over the negative?

Mr. SCHMIDNER. It does not spread. The negative is not too wet, and you have to let it drain wherever you pencil with the brush. I strengthen parts of a negative in the same way.

Mr. ACKER. It takes the utmost care to retouch with a fine needle, and no brush is fine enough.

Mr. SCHMIDNER. You are expected to get a brush fine enough. I have done this, and so can any retoucher. If the hair is lighter in one place than it should be, I can with this reducing agent and brush darken it.

Mr. EDDOWS. I should like to ask if any of the printers have had any experience in using acetate of lead to free the prints from hypo.

Mr. POWER. I understand it is a great detriment to the prints; it makes them flat.

Mr. EDDOWS. It was recommended to me by an amateur, but I understand that Mr. Notman of Montreal uses it entirely, and, I saw some of his prints and they were not flat, but as brilliant as could be.

Mr. BENDER. I think that salt is as good an agent for freeing the prints from hypo as can be found. I have run prints through the salt water and held them there for two or three minutes.

Mr. EDDOWS. I have seen prints that had gone through salt water and had staid in the tank all night tested with starch, and they have shown the hypo.

Mr. POWER. I think when the photographs are printed and mounted the same day they last much longer and do not fade. When I was in Pach's, all the photographs were printed and mounted on the same day, and burnished, too, making a finished photograph.

Mr. BENDER. I have seen photographs that were printed and mounted on the same day that stood the test of time better than those which have been left in the tank all night, but I think sometimes there is something in the mount.

Mr. BUEHLER. When prints are printed and mounted on the same day they are thoroughly washed, while those left in the tank till the next morning are saturated with hypo.

* By using the ferrous-oxalate developer, all stains are avoided.—Ed.

Mr. POWER. I have always noticed this—prints that have been toned deeply last longer than those toned with a warm tone. I have some of Sarony's prints made when he used that warm, red tone, and before I had them six months they looked as though they were ten years old.

Mr. POWER. In our tank we have a false bottom of wooden lattice-work, so that it can be taken out with ease.

Mr. ACKER. In Mora's the water pipe is at the bottom of the tank, which is of galvanized iron, whereby the prints are forced up from the bottom and kept constantly moving.

Mr. SCHADNER. The best washing apparatus I have ever seen is used in Moreno's. There is a large tank, and a hose attached to the water-pipe, and over it a sprinkler such as is used in bath tubs for shower baths. The prints are well soaked, the water is turned on, and the prints are kept moving all the time.

Mr. BENDER. We have merely a tank with a lead water-pipe running about two inches from the top. The bottom is filled with pebbles. Sometimes for a year we have no trouble with hypo., and then again no matter what is done it will show. We had a batch of prints spotted with hypo., and I found that the blotters had been laid on the table on a piece of cigar stump, and this made yellow spots in the prints. We had a lot of mounts, and the prints as they were mounted on them showed dark yellow spots. On the larger prints they did not show, only on the cards and imperials. We used mounts of another manufacturer and the spots disappeared.

Adjourned.

Society of Amateur Photographers of New York.

THIS Society met at their rooms, No. 1262 Broadway, on the evening of the 14th inst., President F. C. BEACH in the chair.

The following gentlemen were proposed for membership and unanimously elected:

MESSRS. William Tilden, Ralph McNeil, Walter Clark, William R. Trippe and William Darrow, Jr.

The SECRETARY then read the Treasurer's report, which was unanimously adopted.

Mr. BEACH announced that he should be glad to meet any members who desired to experiment in development, etc., on the evening of the 22d inst., at their rooms. The first

lantern exhibition for the fall would take place on October 30th.

Mr. BEACH. I am pained to be obliged to announce the death of Mr. Henry T. Anthony, whom you all know was connected with one of the leading photographic supply houses in this city, and who has been all his life, I may say, an experimenter in photography and an amateur, and who has been especially interested in amateurs. In the early days, when photography was little known, he took great pleasure in going out of his way to assist those who wished knowledge, and I think it befitting to his memory that we take some action in regard to it.

Mr. ROBERTSON. I hold in my hands resolutions which I desire to offer for the Society to act upon. In presenting these resolutions, I desire to testify on my own behalf to Mr. H. T. Anthony's uniform kindness to those who applied to him for information. The simplest question from a beginner received the same attention, and was answered as fully and carefully as any knotty problem presented by an older professional.

Nearly twenty-six years ago I met him for the first time, and so great was his love for his profession, and his willingness to help those who were studying it, even as amateurs, that although I had known him scarcely more than a week, he came to Staten Island to help me out of a photographic difficulty I had fallen into.

At that time there were but few amateurs, and there were still fewer professionals who were willing to give information to outsiders.

Many amateurs can bear testimony with me to his kindness in imparting the knowledge he had obtained by long study and careful experiment, and there are many, perhaps some here to-night, who would have given up in despair were it not for his helping hand extended so kindly and so freely.

Whereas, the sad intelligence of the death of Mr. Henry T. Anthony has reached us, it seems fitting that this Society, although not having his honored name upon its rolls, nevertheless, being affected by all that the art-science gains or loses, should take some appropriate action, to appear upon its records. Be it therefore,

Resolved: That this Society, in common with the whole photographic world, has met with a serious loss in the lamented death of Mr. Henry T. Anthony, whose devotion to photography, whose interesting efforts in be-

half of everything pertaining to its advancement, and whose special interest in and kindness to amateurs won for him an enviable place in the annals of the art, and the hearts of all who knew him.

Resolved: That these resolutions be entered on the minutes of this Society, and a copy be transmitted to the firm of E. & H. T. Anthony & Co.

The above resolutions being duly seconded, were unanimously adopted.

Mr. BEACH then read the minutes of the Committee on Photography of the New Orleans World's Exhibition, as published elsewhere, and thought the Amateurs should be represented.

Mr. PARTRIDGE. I move that the Society send exhibits to the New Orleans World's Exhibition, and that the President appoint a Special Committee of two to collect and arrange such exhibits, with power to decide what subjects they shall embrace.

Mr. NEWTON. I move to amend by making the committee three in number.

The PRESIDENT. I will appoint as that committee Mr. W. E. Partridge, Mr. William H. Gilder, and Mr. L. P. Atkinson.

Mr. NEWTON. I move that the President appoint a Special Committee of three or five, on gelatine plates, whose duties shall be to test all grades and brands of gelatine plates manufactured or sold in the United States, as to such characteristics as shall seem to them desirable to constitute a reliable plate for the amateur's use, and to report from time to time the result of their labors. The motion was carried.

The PRESIDENT appointed, Messrs. H. J. Newton, Dr. J. H. Janeway, and D. H. Walker, reserving the right to name the other two members subsequently.

Mr. BEACH then alluded to the field excursion, published elsewhere.

Mr. C. RAE SMITH exhibited an improved camera, and—

Mr. FISK a shutter, both of which were described at length.

Mr. BEACH gave the formula of a new intensifier as follows:

No. 1.

Saturated solution of bichloride of

mercury, 1 ounce.

Water, 6 ounces.

The plate is put in this solution until it becomes a little white, and is then washed off

and immersed in the second solution, as follows.

No. 2.

Water, 6 ounces.

Sulphite of soda, 120 grains.

Mr. DUBOIS inquired if Mr. Beach first used No. 1, rinsed the plate, and then No. 2?

Mr. BEACH. Yes; and if the first application is not sufficient, immerse the plate in the respective solutions again until sufficiently intensified.

Mr. PARTRIDGE then described an easy way of converting an ordinary student's lamp into a perfect lamp for developing purposes. He surrounded a portion of the chimney with the ordinary ruby globe as used in cigar stores, protecting the bottom of the burner with a pasteboard tube having a slit cut in it to fit over the bent arm of the lamp. The chimney above the globe was protected by ordinary ferrotype plate bent in the form of a tube, and on the top of the ferrotype tube wires were laid crosswise, on which rested a common small tin biscuit-pan, which prevented the light from going upward.

Mr. McNEIL exhibited several excellent prints of groups and landscapes; and also views of Mauch Chunk, Pa., made on September 10th were shown, and some negatives made at Orange. Then followed a question-box discussion, Mr. Partridge acting as chairman, while Mr. Beach conducted experiments in the dark room.

Question No. 1. Should a small diaphragm be used with a group lens in taking a portrait? Should the use of a diaphragm in such a case have sole reference to detail in the background?

Mr. PARTRIDGE said that his own practice was, with a Dallmeyer Rapid Rectilinear lens, to omit all stops and focus on the background, which, of course, must be within a short distance of the subject. He thus obtained a soft portrait.

Mr. ATKINSON thought the question indefinite, in that it was not specified whether gallery work or outdoor work was referred to, these requiring opposite methods of procedure. In the gallery the background was arranged; the chief attention is paid to the subject, and the usual practice was to work with as large an aperture as possible. In the open air the conditions were different, and varied with the view, the light, and the lens. It is difficult to get a landscape background and the portraits

equally sharp; at best, a sort of average sharpness is all that can be obtained. The test of sharpness is enlarged. The future of amateur work lay in the direction of small plates, from which enlarged plates or prints could afterwards be made.

Question No. 2. What is the best method of getting good tones when ready-sensitized paper is employed?

Messrs. DEAN and PARTRIDGE thought such prints left much to be desired.

Mr. ATKINSON said that it was possible to make good prints on ready-sensitized paper. The mistake was that there is usually too much washing. The ready-sensitized paper contained a very small quantity of silver; otherwise it could not be sold at such a low price. Much acid was used to preserve the paper, usually acetic acid. By prolonged washing the silver was all washed out. His practice was to wash in three waters: first in plain water, then quickly remove to another dish containing ammonia in the proportion of one dram to two quarts of water, then in water again, from which the prints are removed to the toning-bath, the latter being at a temperature of 95 to 100 deg. F. By this treatment he obtained whatever tone he desired. Specimens made by this process were shown, which were more satisfactory than most of the members had seen.

Prints were also shown by Mr. Gilder and Mr. Robertson, made on paper prepared in a plain nitrate of silver bath, which had a satisfactory tone.

Mr. BEACH then gave an interesting record of experiments made on various plates with a 4 x 5 Dallmeyer Rapid Rectilinear Lens and Prosch Shutter, and their development, concerning which a general discussion ensued.

Mr. METCALF exhibited a little Beck camera. Adjourned.

The next regular meeting will be held on Tuesday, the 11th of Nov., on which occasion Mr. C. A. Needham will give a demonstration of the platinotype process.

State of Illinois Photographers' Association.

THIS Society held a regular monthly meeting on Tuesday evening the 14th inst., at the studio of Joshua Smith, 209 N. Clark Street. There was a good attendance. The minutes of the last meeting were dispensed with.

The SECRETARY read a telegram he had re-

ceived from Messrs. E. & H. T. Anthony & Co., announcing the death of Henry T. Anthony, as follows:

NEW YORK, Oct. 13th, 1884.

EDITOR OF THE EVE:

Mr. Henry T. Anthony died at 7 o'clock Saturday morning. Funeral at ten A. M. Tuesday.

E. & H. T. ANTHONY & Co.

Mr. GENTILE stated that the loss of Mr. H. T. Anthony would be deeply felt by his numerous friends; he was one of the pioneers in the photographic stock business of the United States, and was a very popular man; he thought that his name was known to every photographer in America.

The following resolution was unanimously adopted and ordered to be forwarded to the firm:

Resolution passed at a meeting of the State of Illinois Photographers' Association, held October 14th, 1884.

Resolved, That this Association are pained to hear of the sudden death of the much respected Mr. Henry T. Anthony, and therefore beg to tender their condolences to the firm.

The SECRETARY said that he would take this opportunity to propose that they send their congratulations to Mrs. Clark, formerly Mrs. J. H. Fitzgibbon, proprietress of the *St. Louis Photographer*, on the occasion of her recent marriage. The following resolution was passed unanimously:

Resolved, That we present our congratulations to Mrs. Clark, formerly Mrs. J. H. Fitzgibbon, proprietress of the *St. Louis Photographer*, on the occasion of her recent marriage.

On the CHAIR asking if any one had anything to say about prices a general discussion ensued, when the fact was elicited that Mr. Dabbs, of Pittsburgh, had a lady in his reception room whom he said was worth her weight in gold; as she had great tact in getting high prices without trouble from his customers.

Mr. TOLMAN suggested that it would be a good scheme to import this lady to Chicago to teach the photographers to get better rates for their professional services!

Many members thought the proposition was a good one.

Mr. J. F. Edgeworth stated that Jack Ryder, of Cleveland, had great tact in extracting high fees for photographs.

It was moved and seconded that the Society adjourn, which they did, and fell into line and followed Mr. Joshua Smith and took lunch with him, and spent the remainder of the evening most convivially. Adjourned.

The World's Exhibition in New Orleans.

MINUTES of the meeting of the Committee on Photography of the New Orleans World's Exhibition.

Present, Edward L. Wilson, V. M. Wilcox, Chas. Himes, F. C. Beach.

Mr. EDWARD L. WILSON in the chair. On motion of the chair Mr. F. C. Beach was elected Secretary.

The CHAIR stated that in communication with Director-General Burke of the New Orleans World's Exhibition, Mr. Burke had extended an offer to him as Chairman of the Committee on Photography to take steps towards having a very complete exhibition of everything pertaining to photography at the coming exhibition; that he would grant all the necessary space and provide circulars and post them without expense to the Committee.

Col. WILCOX moved that the offer by Director-General Burke of the New Orleans World's Exhibition to grant space for exhibits and to print and send out circulars without expense to the Committee be accepted with thanks. Carried.

Prof. CHAS. HIMES offered the following resolution:

That it is the sense of the Committee that the exhibit should include apparatus and other requisites used in photography, processes, results, literature, historical progress and educational applications. Carried.

Prof. HIMES then offered the following:

Resolved, that Amateur Associations be invited to join in forming collective exhibits at the Exhibition. Carried.

Also by Prof. HIMES,

That Educational Institutions be invited to



co-operate in as far as photography may be employed as an educational agent. Carried.

Col. WILCOX moved that the chair appoint with power the necessary committees to carry on the different departments as outlined. Carried.

The CHAIR then appointed the following gentlemen as sub-committees with power.

EDWARD L. WILSON	}	<i>Committee on Practical Photog.</i>
S. T. BLESSING,		
COL. V. M. WILCOX,	}	<i>Com. on Apparatus & Photo. Requisites.</i>
PROF. CHAS. HIMES,		
	}	<i>Com. on Educational Phot. & Literature.</i>
F. C. BEACH,		
	}	<i>Com. on Amateur Societies and Exhibits.</i>

Adjourned.

Having been appointed a sub-committee for the purpose of interesting dealers and manufacturers of photographic apparatus and requisites at the World's Exhibition, to be held in New Orleans in December next, I hereby cordially invite all to prepare their

exhibits without delay. Circular letters will be mailed giving instructions for shipment, etc. Ample space has been allotted by the Director-General free of charge.

It is unnecessary for me to say anything concerning the advantages manufacturers and dealers may reap by availing of this opportunity.

V. M. WILCOX,

Com. on App. and Photo. Req.

Please advise by letter at once to the undersigned if you contemplate making an exhibit.

V. M. WILCOX,

591 Broadway, N. Y.

THE Photographer's Bureau of Information for October is at hand, overflowing with useful "ads." and bargains. If you stand in need of anything from a camera to an assistant send for the Bureau.

An Enjoyable Photographic Excursion.

IN response to the polite invitation of Mr. Munn, of the *Scientific American*, a few members of the Society of Amateur Photographers of New York went on a photographic excursion on the 10th inst. to Llewellyn Park, located on Orange Mountain just west of the City of Orange, N. J., and during the day partook of a substantial lunch at his beautiful residence in the Park.

The party left New York shortly after 10 A. M., and were met at Orange by Mr. Munn's son, Mr. H. N. Munn, who had provided conveyances for the trip. After riding through the beautiful streets of Orange, noted for their fine roads, the picturesque entrance of the Park was soon reached, and there like a company of drilled militia each man set up his camera in line and fired at the vine-covered stone lodge backed by stately evergreens. Further on, the glen with its winding road through the woods was the subject of attack.

The next prominent object was a new and elegant residence recently made famous by the public exposure of the frauds committed by its former owner. The winding walks, bordered with beautifully colored plants and the fine lawn formed a very appropriate foreground for the massive but stately residence. Continuing on, a few of the party separated and photographed pretty bits along the road in the Park, while the rest went on direct to Mr. Munn's residence, which occupied a commanding site on the side of the mountain.

Many exposures were then made; views of the terraces with the rustic walk through the same, the winding roads, the new rustic bridge across a ravine, a lawn-tennis court with its symmetrical bower at one end and the rustic summer house above the terraces, and the commanding views therefrom, were all immortalized photographically.

Several of the terraces as they ranged along the side of the mountain were laid out in geometrical parterres that, with many rare plants, presented to the eye a very charming picture.

At two o'clock the party was summoned to the house for luncheon, and were soon seated around the table (which by the way was tastefully decorated with various colored and beautiful flowers), in a well appointed dining-room, the outlook from which upon broad, well trimmed lawns and noble trees beyond was refreshing and delightful. The menu comprised many delicate dishes, and the hospitality of the host was liberal and generous in the extreme. Luncheon over, some instantaneous views were made of horses jumping and other lively subjects. A group of the party with their instruments at hand, including as a background Mr. Munn's picturesque vine-covered piazza, was successfully made, comprising also one or two objects of interest not brought from New York—a donkey and a dog.

The setting sun gave notice of the waning day, and cameras were packed for the homeward trip. The party were now conveyed southward through the Park up the mountain to see and photograph the recently discovered wonderful geological formation laid bare at a quarry located just at the outskirts of the Park. Here the remains of what is supposed to be an extinct volcano were plainly visible, and some half dozen of the party hurriedly secured pictures from different points of view of the noted formation. Continuing on down the mountain the depot was quickly reached, and while waiting for the train on the depot platform the President had the pleasure of introducing the visitors to Mr. O. D. Munn and his son, Mr. Chas. A. Munn, who had just returned from the metropolis.

In a few appropriate remarks the President thanked Mr. Munn heartily for his generous hospitality, and for the pleasure which he had afforded them, and the unanimous verdict was that the excursionists could not have had a more enjoyable time. A cool, crisp, quiet, clear atmosphere made the weather simply magnificent for the work in hand, and the day will long be remembered for its perfectness and pleasant associations.

A more jovial, genial, and harmonious set

of gentlemen crazy on the subject of photography could not be found.

Among the apparatus was some of the most expensive and highly finished manufactured, including elegant specimens of English work.

Several kinds of shutters were employed, and it is estimated that seventy-two exposures were made.

The party reached New York at 6.15 P. M., after a day of unalloyed pleasure, and was composed of the following gentlemen: President Beach, Vice-pres. W. H. Gilder, Dexter H. Walker, R. A. C. Smith, Geo. H. Ripley, James B. Metcalf, Aug. W. Durkee, Henry J. Newton, Gilbert A. Robertson and C. W. Dean.

Set Right.

TO THE EDITOR:

IN the reports published in the various photographic journals of the proceedings at the meeting of the Society of the Amateur Photographers of New York, a rather serious error crept in.

In the first place Mr. A. L. Henderson is made responsible for what I said, or rather for a portion of what I did say. And secondly the whole report of our conversation is so incorrect as to leave nothing worth reading or remembering.

As I consider the subject of that conversation a matter of decided importance to all thinking photographers I submit a correct report of the sense of our remarks, trusting that a careful comparison of the two versions will set me right in the minds of many who may have read and wondered what I was talking about.

Mr. Henderson on being asked by some gentlemen present the solution of some knotty point, which I do not at present recall, answered as follows:

Mr. HENDERSON. I don't know. The solution of the question asked was on a par with the mysteries surrounding this peculiarity of the gelatine plate—one of these in the dark room, which has been unexposed to light, will have no odor. Taken into the light after it has been for some time exposed

to it, there will still be none. Dampen it, and instantly the odor of bromine will be strongly perceptible.

Mr. COOPER. If that plate was dampened in the dark room, would the odor of bromide be perceptible?

Mr. HENDERSON. No; it would not.

Mr. COOPER. Mr. Henderson; in answer I do not consider your question a difficult one. I would say, that my theory of the action of light on a gelatine film is the decomposition of bromide of silver in such a way that the bromine, being separated, remains in the film in a soluble condition, while the silver is deposited in a slightly oxidized but extremely finely divided metallic form. Now, I hold that this theory clearly explains the phenomena you refer to, that is, a plate in the dark room, not having been affected by light, will remain inodorous wet or dry. On removal to daylight the bromine is liberated by this action, but is incapable of giving off fumes, by reason of its dryness. On moistening, the conditions for vaporization are presented; hence the odor is immediately exhaled.

Mr. HENDERSON. That is a novel proposition; but I do not think your theory of the deposition of silver in a metallic form correct, because a dry plate may be exposed to daylight and fixed in a hypo. bath so as to become perfectly clear. This would not be the case if any metallic silver were deposited.

Mr. COOPER. I do not claim a complete deposit of metallic silver but a partially oxidized one, which, as we all know, is easily soluble in hyposulphite of soda. This solution of oxide of silver by the use of hypo. is known even to many housekeepers, who use it to remove the tarnish from silverware.

Mr. HENDERSON thought Mr. Cooper's theory a good one.

The Magic Camera Stand.

WE have a number *en route*, and shall be pleased to send circulars.

E. & H. T. ANTHONY & Co.

New Intensifier for Gelatine Plates.

BY H. T. ANTHONY.

AFTER development the plate should be thoroughly washed, so as to get rid of all the hypo.; then place the plate for a short time in a white dish or tray into which has previously been poured a half saturated solution of bichloride of mercury. For a slight intensification five or ten seconds will suffice; a longer time will be required for a greater degree of intensification. Wash thoroughly and put in another dish, into which a solution of one grain of bromide of cadmium to two ounces of alcohol has been placed. The desired intensification is obtained by dipping the plate for a few seconds in this solution. The result is clear black and white, and no trace of yellow color in the film.

Sudden Death of A. C. Platt.

MR. A. C. PLATT, the well known photographer of this city, died at his residence, corner of Washington and Perry Streets, on Thursday evening, Oct. 2d, at half past eight o'clock.

He had not been feeling well for the past two days, and yesterday morning called at Dr. T. M. Cook's office, procuring some medicine. He went to his home last evening, and a short time after eight o'clock while sitting in a chair asked his daughter to hand him some medicine. She did so, and upon his taking hold of the glass it fell from his hands and he sank forward. Dr. Cook was immediately sent for and every effort made to resuscitate the stricken man, but without avail. He had passed quietly away without a struggle.

Mr. Platt, who has resided here for some seventeen years, has ranked among the first photographers of the State. He has always been very much devoted to the art, and was possessed of many friends. He was born in Milford, Connecticut, and was, at the time of his death, between 56 and 57 years of age. He leaves five children, three girls and two boys.—*Sandusky, O., Register.*

Pictures Received.

FROM C. E. Wallin, of Montgomery, Ala., two genre pictures illustrating the ancillary qualities of the much abused pug. One picture is called "Question of Time," the features of which are composed of a tree bearing evidence of its addiction to apple-bearing, but which for the time being is especially devoted to the support of a small boy, who from his very slight hold appears to be ready to fall into the chops of an ugly pug sitting quietly watching him.

The other picture is one that would appeal to the feelings of every mother. In this the same dog who savagely kept his eye on the venturesome but thoughtless purloiner of forbidden apples, now with eye as fierce and teeth as menacing watches over the sleep of a child who equally venturesome and necessarily more thoughtless has strayed from the paternal roof into the small world surrounding it, and, overcome by fatigue, has laid himself quietly down in a lonely and sequestered spot.

Such are the triumphs of modern art as here illustrated, by means of which the same animal can be utilized without the slightest change in its features to represent the utmost malevolence and the highest benignity, according to his surroundings.

It is unnecessary to say that this wonderful dog must have come down to us from the "stone," or at least the "terra cotta age."

ABOUT the 12th of July last, during a very violent thunder-storm, Dr. Henry G. Piffard of New York, who was at the time living at Greenwich, in Connecticut, decided to attempt to get a negative of some of the electrical discharges. Pointing his camera with a dry plate in position to the region where the flashes seemed most abundant he succeeded in his object. We have before us a print from the negative, which shows plainly the foreground, the reflection of the flash in the water of the Sound, the clouds in the sky, the distant hills, (at least ten miles away) behind which the stroke disappeared, and the reflection in

the sky of the light from a burning barn on Long Island which had been set on fire by lightning.

The feature which immediately attracts the attention of the observer is the apparently immense width of the lightning flash, which measures upon the print $\frac{3}{4}$ of an inch. Accompanying the main flash are a number of markings like lightning flashes, which seem to emanate from a central point and curve and twist in different directions.

We hope to hear more about this attempt to "*seize the lightning flash*" from some competent meteorologist.

By the hands of Mr. Von Sothen of the School of Submarine Mining at Willets Point we have received an instantaneous picture of the explosion of a land mine. The particulars are as follows: Aug. 28, 1884: Explosion of land mine. Charge, 110 pounds of mortar powder; line of least resistance, 103 feet; distance, 151 feet; height of jet, 30 feet; water radius 13.3 ft.

At first sight the appearance of this picture reminds one of a tree almost hemispherical in shape with thick foliage close to the ground, light shadows giving the appearance of masses of foliage, while portions of the flying material moving at an angle to the axis of the lens present the appearance of sprigs or the ends of limbs. The general shape is quite different from that of the jets caused by submarine explosions, the tendency of the uplifted material being to spread out laterally instead of mounting to a great height in the air.

The print is well worthy of a place in a general collection of photographs. Our thanks are due to Mr. Von Sothen for his courtesy.

The Old Stoddard Drug Store.

THE old and reliable drug establishment No. 27 Main St., formerly owned by Dr. Wm. Stoddard, lately deceased, will be continued by Mr. Ed. B. Hallock, under the old name, Wm. H. P. Stoddard. Ed. is well known and commands an exceedingly large circle of friends and acquaintances,

and it will be quite gratifying for them to know that he will conduct the business henceforth. He served many years in the store, and under the doctor's careful training learned the drug business thoroughly. He is a competent prescriptionist and is just energetic enough to push the business for all that is in it. They carry the very purest line of drugs and chemicals, everything pertaining to a leading drug house; in addition they have a full line of all kinds of photographic materials and artists' goods. He invites his friends to visit his establishment, and solicits a share of the general trade. We wish him well and are certain he will do finely. — *Evansville Argus*.

The Late Chauncey Barnes.

THE sad and unexpected news of the death of this old and respected citizen of Mobile will be a surprise to a great number of his friends and acquaintances. He died on yesterday afternoon, Sept. 20, at five o'clock, from congestion of the lungs, after an illness of seven days. Mr. Barnes was born near Rochester, New York, and was 67 years old at the time of his death. He leaves a widow and one married daughter, who lives up on the Alabama River about one hundred miles.

Mr. Barnes was a man of decided personality. He was kind hearted and charitable as well as obliging, and he paid many thousand dollars for his inability to refuse the requests of his acquaintances. He was one of the first to adopt the business of daguerreotyping, and was a popular photographer at the time of his death. His reminiscences of the changes and improvements in that business were both interesting and entertaining. It is remembered from his own statement, that the trees now so ornamental in Bienville Square, were planted from the voluntary contributions of Mr. Barnes, who laid aside a percentage of the profits of his gallery for one year for that purpose.

CAN anyone spare a copy of the BULLETIN for August or September?

Our Illustration.

My Dear Editor: At the request of several photographic friends I send you the following facts concerning our late friend and co-worker Henry T. Anthony.

A day or two before the accident, which led to his unexpected death several days later, he did me the honor of a visit at the gallery—the first in several years. It was a dark, rainy day, and like a true photographer our lamented friend had resolved to spend part of it in experimental investigation. He had come, he said, to discuss with me a lately sprung-up idea of his, which was, that in the lighting of the sitter's face the professional photographer would find the use of an opera glass a very great assistance. Of course, his plan was simply to look at the sitter from the point of view determined on through the opera-glass, with the object of studying more easily than by the naked eye the effect of light and shade, make whatever changes in the illumination seemed necessary to secure harmonious modelling of the features, and then to place the camera in position and expose in the usual way.

At his request I proceeded to "light" him rapidly in the customary manner. The effect, having first been mentally noted, was then viewed through the opera-glass and appeared markedly stronger—more pronounced and more brilliant than it had to the unaided eye. The image being so much smaller than the original head itself, and being non inverted and exceedingly brilliant, could easily be studied as though it were a small finished picture, and in these respects it was in every way preferable to the image on the ground glass of the camera. The negative which was made at this sitting is the one used for illustrating the present number of the BULLETIN, and is probably the last one ever made of our departed friend.

After a few more optical experiments on this subject we arrived at the conclusion that the opera-glass would undoubtedly be an aid to many in the study of lighting the human face, and more especially to near-

sighted operators, but that it would scarcely be of any assistance to one who was already sufficiently able to judge of the photographic value of lights and shadows by merely viewing them on the face itself.

Very truly yours,

B. J. FALK.

Visitors for the Month.

GEO. E. DESBARETS, Montreal; N. L. Whitney, Eustis, Fla.; Mr. Chain, of Chain, Hardy & Co., and Chas. Bohm of Denver, Colo.; E. Cope and H. C. Phillips of Philadelphia; E. D. Ritton, of Danbury, Conn., a customer of 40 years standing; Geo. Eastman and W. H. Walker, of Rochester; W. Milliken, of Monticello, N. Y.; L. P. Atkinson, Brooklyn; William Williams, with Mullett Bros., Kansas City; T. H. Johnson, with Smith & Pattison, Ralph J. Golden with H. J. Thompson, and Mr. Henry G. Thompson (of D. T. & Co.) and wife, J. Sawtelle Ford, all of Chicago; E. O. Zimmerman and C. A. Zimmerman, of St. Paul; F. A. Nowell, Charleston; C. Von Sothen, of Wilets Point; and Mr. and Mrs. F. York, of London, Eng.; also Rev. George Ayres, of Chicago.

Another Catalogue.

ANOTHER fine catalogue has just come to hand, issued by Mr. Francis Hendricks of Syracuse, N. Y. It contains some three hundred pages, and is as nearly perfect as any catalogue can be in these days of constant change. Besides all the usual requirements of the photographer a long list of artists' materials, mouldings, frames, mirrors, card stock and other articles that may find favor in the eyes of the photographer, are included. It is very neatly gotten up, and is really one of the finest.

THE Anthony Transparency dry plates have proved to be an eminent success, and those who are using them speak strongly in their favor. There is not one single complaint as to fogging or failures.

DIED at Philadelphia, Aug. 18th., Col. Joseph Janvier Woodward, M. D., U. S. A., after a somewhat prolonged illness. Dr. Woodward, it will be remembered, became very prominent by reason of his attendance on the late President Garfield. He was also widely known on account of his numerous papers on various subjects connected with his profession and his editorship of the *Medical and Surgical History of the Rebellion*, and to photographers also through an essay on the *Application of the Photograph to Micrometry*, and *Remarks on Photographic Micrometry*, specially with reference to the micrometry of human blood in criminal cases. He was a member of many societies.

Remedy for Frilling in Gelatine Plates.

The tendency of the film of gelatine plates to frill and rise up off the glass during development is very common when the solutions are warm.

The *Brit. Journ. of Photog.*, of a recent date, contains a remedy described by Mr. Watmough Webster, which, in his experience, has proved to be valuable and useful.

After the frilled negative has been fixed it is washed a few minutes, and then immersed in an alum solution for one hour; it is again washed and soaked for twelve hours—over night, for instance—in a dish containing alcohol; the dish should be covered with a sheet of glass to prevent the evaporation of the alcohol. At the end of twelve hours the frilling or blistering will have entirely disappeared.—*Scient. Amer.*

[Think of soaking a plate twelve hours. Use the Eastman Tropical Dry Plates; they never frill, and dry by heat, if you wish, in a few minutes.—ED.]

A Queer Experiment in Photography.

AT the session of the National Academy of Sciences of Oct. 16th, Professor Pumpelly read a paper on an experimental composite photograph of the members of the Academy. This was in the same direction as the photographs made by Galton to ar-

rive at the average of certain types of men. In the case of thirty-one men of the Academy the compound negative was formed by exposing the camera for two seconds to the photograph of each member, making a total exposure of sixty-two seconds, which was found to be the best time to expose any one of the photographs separately. The resulting pictures showed clearly the features common to all, but only faintly the peculiarities of each. The camera was focused on the eyes. Since eyes in different people differ in their distance apart, this produces some indistinctness in the rest of the picture, particularly the mouth, which appears to lack decision. Five pictures of different classes were shown. This method of combining portraits gives some startling results in bringing out types either of mental, moral or of family race classes, such as criminals and consumptives.—*New York Tribune*.

M. FRANCK DE VILLECHOLLE made a communication on the intensification of gelatino bromide plates by means of the mercurial salts. He proposes a second immersion in the hyposulphite of soda bath. If this be done, and followed by plenty of water, the negative will not turn yellow nor be destroyed by time. He proposes the following method. Make three solutions:

No. 1.

Water, 100 parts.
Bichloride of mercury, . . . 2 "

No. 2.

Water, 30 parts.
Iodide of potassium, . . . 3 "

No. 3.

Water, 50 parts.
Hyposulphite of soda, . . . 4½ "

Mix the solutions as usual and plunge in the plate, which will soon attain the required density.—*British Journal of Photography*.

ONCE more we must ask the indulgence of our readers for several articles promised and again crowded out.

CORRESPONDENCE.

SAN FRANCISCO, Oct. 9, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gents: The 5 x 8 Fairy which I ordered through Mr. S. C. Partridge of this city is the lightest and best made camera which I have seen so far, and is in every respect satisfactory.

Yours truly,

WALTER M. SPEYER.

LITTLE ROCK, ARK. Sep. 27, 1884.

E. & H. T. ANTHONY & Co

Gentlemen: I enclose amount of bill for "Climax Royal Camera," which I found awaiting me on my return from my summer vacation. It is well named for studio work. It is difficult to see how anything could be better, and I am delighted with it.

Respectfully,

T. W. BANKES.

NEW YORK, Oct. 20, 1884.

MESSRS. E. & H. T. ANTHONY & Co

Gentlemen: Please accept my thanks for the camera boxes and holder which you were kind enough to present to the Museum of the School of Mines. I shall label them and place them in the cases devoted to photography, and they will no doubt be of great interest to future students of the progress of this most interesting art.

Very truly yours,

C. F. CHANDLER.

JULY 29, 1884.

TO THE BULLETIN:

I saw you advertised the use of javelle water and alum to reduce intensity.

I thought I would try it and found it to work like a charm. I took a 14 x 17 negative made on an Eastman dry plate that was very intense. This negative had been dried. I soaked it in water for fifteen minutes and then applied the javelle water and alum, in proportion of one ounce of the former to one ounce of a saturated solution of alum. I flowed the plate until I got the required intensity. It acts altogether on the high lights and retains the shadows. It is perfect.

Yours truly,

G. H. BRONNER.

ROCHESTER, N. Y., Sept. 30, 1884.

EDITOR ANTHONY'S BULLETIN.

THE photographers of Rochester organized a meeting this evening, J. H. Kent in the chair, and agreed to advance the price of cabinets and card photographs one dollar per dozen.

Good feeling exists amongst the fraternity, and all present expressed themselves anxious for a still further advance, as soon as the public are accustomed to the step just taken.

S. D. WARDLAW. Sec'y.

N. Y. May 27, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

I have lately tried with excellent success your "Pearl Paste." It sticks well, dries quickly, does not sour and is always ready for use, thereby rendering it much more convenient than starch, which must of course be specially prepared. I intend to use it altogether in the future.

Yours, very respectfully,

HENRY BEADEL, *Amateur.*

NEW YORK, Oct. 3, 1884.

EDITOR ANTHONY'S BULLETIN.

Dear Sir: In your last issue is published a list of subscribers to the P. A. of A. Convention, recently held at Cincinnati. As my name and amount was omitted I beg to say that I subscribed and paid to the Secretary the sum of \$50 00.

Very respectfully,

LAFAYETTE W. SEAVEY.

MILWAUKEE, WIS., Oct. 7, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Gentlemen: Your favor of the 4th ult. is received, and in reply permit me to say: I regret that Mr. Seavey's name did not appear in the published list of contributors for the benefit of the P. A. of A. at Cincinnati, as I know that he has always been to the front with money and means to aid the Association. There were other prominent St. Louis parties entitled to credit on the list; but as a considerable sum of money was handed to me in bulk by the Secretary I did not have the names to publish.

Respectfully yours,

W. A. ARMSTRONG,

Treasurer P. A. of A.

ANTHONY'S PHOTOGRAPHIC BULLETIN

FOR NOVEMBER, 1884.

PUBLISHED BY E. & H. T. ANTHONY & CO., 591 BROADWAY, N. Y.

ADVERTISEMENTS should reach us before the 10th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued—if for one, three, six or twelve months. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

Page, for a single issue,	\$15
Half page, “ “	8
Quarter page, “ “	5
Eighth page, “ “	3
Special Notices, per line, . . .	25 Cents

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Anthony's

Photographic Bulletin,

ILLUSTRATED.

Terms for 1884: Two Dollars.

Unillustrated, One Dollar.

Payable in Advance,

And only to those who pay.

VOL. XV.—35.

A New Gelatinous Material.

THE uses to which gelatine and similar substances are put in photography are so manifold and so important that an account of any addition to the list naturally possesses great interest. We gave details last week, gleaned from Mr. Stanford's paper read before the Society of Arts, of the connection between seaweed and the important elements bromine and iodine; and to-day we purpose bringing before our readers particulars which suggest a practical outcome in photographic directions of that gentleman's investigations upon the gelatinous materials to be obtained from seaweed.

Many inquiries have of late been made about gelatinous substances from Eastern sources, but of whose actual origin little seems to be known, so-called "Japanese isinglass," sometimes termed "gelose," being one of them. This remarkable substance which has been successfully tried in emulsion making, is extracted from a species of seaweed to be found on our coast, though not very readily, the particular plants to which Mr. Stanford directed his attention being of common occurrence, and found in practically illimitable quantity. The well-known orders of *Fuci*, familiar to all dwellers by the shore as "wrack," "bladder-wrack," etc., at one time furnished all the seaweed used for making kelp; but they are now entirely neglected;

and the *Laminaria*—the red weeds found growing only under water, though often torn up by storms and cast ashore as “tangle”—are employed in their stead.

The extraction of iodine is the chief object of the collection of this weed, but this new gelatine is now proposed as an equally important product by Mr. Stanford, who has

devoted a lifetime to the investigation of the weeds and their economic applications.

Before describing its properties in detail it may be well to refer to the properties of the gelose alluded to, as tabulated in comparison with other similar substances by that gentleman. He finds 1,000 parts of water to require of—

	Parts.	Proportion.	Melting Point.
Gelose.	4	1	90° F.
Gelideum corneum	8	2	90° F.
Irish moss	30	7.5	80° F.
Isinglass ^a	32	8	70° F.
Gelatine	32	8	60° F.
Carragheenin	36	9	70° F.
Agar-agar	60	15	90° F.

Gelatine is a very wide term, but the table gives, no doubt, an average.

Coming, now, to the mode of procuring this new material, it may be briefly described as the gelatinous matter mixed with cellulose that remains after the weed has been macerated with water to remove the salt, and the name “algin” is proposed to be given to it. Algin is a combination of calcium, magnesium and sodium with a new acid, to be called “alginic acid,” and it is extracted by macerating the plant in carbonate of soda, and by a peculiar process separating the cellulose. The liquid obtained is precipitated by hydrochloric or sulphuric acid. The alginic acid separates and is washed and pressed into a compact cake, in which state it may be sent into the market, or it may be easily bleached first. It may also be saturated with soda and sent out as alginate of soda. It is thus seen

that it possesses the great advantage of being a strictly defined chemical product, which might be expected to be made by purification of uniform character. We do not forget that the same remark was made of gelatine as opposed to pyroxyline, and that no such expectation could be realized.

With regard to the properties of sodium alginate: it will be seen that they are very remarkable, and, either as a medium for emulsion or as a mounting material, the substance evidently deserves a thorough trial. It forms a thick solution when of two per cent. strength, and when above five per cent. it will not pour. Its viscosity is extraordinary. It was compared with well-boiled wheat starch and gum arabic in an ordinary viscometer tube. The strengths employed were as follows. It was found impossible to make the algin run at all over the strength employed:

	Seconds.
Gum arabic solution, 25 per cent. took	75 = 1 in 3,
Wheat starch, 1.5 “	25 = 1 in 8,
Algin, 1.25 “	140 = 1 in 112.

so that algin has fourteen times the viscosity of starch and thirty-seven times that of gum arabic. The evaporation of the algin so as to form sheets is performed in a similar manner to that adopted with glue, and the sheets are almost colorless and very flexible. It possesses several remarkable properties which distinguish it from all other known substances.

Algin, or sodium alginate, is precipitated among other things by alcohol and colloidion, but not by ether. Many acids, silver, and other metallic salts precipitate it; alkalies, pyrogallie acid, bromine, iodine, or chlorine water, etc., do not precipitate it, nor does tartar emetic, thus being distinguished from gelatine, and also by not being acted upon by tannin. It most resem-

bles albumen, but is not coagulated by heat; and, unlike gelose, it does not gelatinize on cooling. In this particular it is more like tragacanth—a much neglected mounting material. It is not dissolved by boiling water.

Among its other properties is a power of forming a compound with aluminium which is soluble in ammonia, and forms when dry an insoluble varnish. With chromium it forms a compound soluble in cold water, which is rendered insoluble by boiling. It behaves in a similar manner to gelatine when mixed with bichromate, becoming insoluble under the influence of light. The silver alginate is stated to darken very rapidly under exposure to light. Finally: Mr. Stanford says—"It forms a singular compound with shellac, both being soluble in ammonia. It is a tough sheet, which can be rendered quite insoluble by passing it through an acid bath.

Thus as a possible substitute for and improvement upon gelatine for emulsion, for mounting, sizing, varnishing, and other purposes, algin or sodium alginate promises to be a most interesting and valuable addition to the list of photographic chemicals.—*British Journal of Photography.*

How to Photograph Microscopic Objects.

BY I. H. JENNINGS.

LESSON XI.—PREPARING SECTIONS OF HARD SUBSTANCES FOR PHOTOGRAPHY.

MANY of the sections of hard substances, such as bone, rock, etc., sold in the shops, are too thick. Those prepared by the best lapidaries cannot be excelled; and if the student can afford to pay the high price charged for making these sections—from 2s. to 2s. 6d. each—he is advised not to undertake the labor and trouble of preparing them himself. For, although the manipulator may be skillful and patient, even when a machine is used, cutting sections of rocks is both tedious and laborious.

There are many excellent machines in the market specially devised for cutting sections; but they are all more or less ex-

pensive, and good work may be done by using very simple appliances, which we shall now proceed to mention. In the first place, procure an iron plate, preferably cast iron, about twelve inches square, and as thick as can be obtained. Next, a Water-of-Ayr stone, and one of harder texture, such as a Washita stone. These may be obtained at any tool shop. A Turkey stone is very good for sections of bone. For grinding down rocks, emery of various degrees of fineness will be required—buy one pound of medium coarse, one pound of medium fine, and one pound of flour emery.

To grind down a rock section, proceed as follows. Make a chip with a hammer about one inch square, and not more than one-eighth inch thick. Sedimentary rocks, such as limestones, may be thicker. Rub down the chip with coarse emery and water on the iron plate, until one side is perfectly flat. Remove the scratches by next rubbing the chip on a piece of plate-glass with fine emery, and then polish with water on the Water-of-Ayr stone; when quite smooth, wash it well, and let it dry. Meantime put some old hard balsam on a glass slip and warm it over a lamp until all the more volatile parts of the balsam evaporate, so that, on cooling, it becomes hard and tough. Don't *boil* the balsam, and don't continue the heat too long. When the balsam is properly hard, heat the chip on a metal plate, rub over it a little turpentine, and remelt the balsam; lower one end of the chip slowly into the balsam, and press it down close to the glass slip. When the balsam is cold, rub down the chip on the iron plate with coarse emery until too thin to bear further friction. Very hard rocks may be brought down to the requisite thinness on the iron plate alone, and will only require a little polishing on a stone to remove the deeper scratches. Sections intended for photography should be cut down to the extreme of thinness, and *all* sections should be cut thin enough to read through when placed on the page of a book. When the section becomes too thin to bear any longer the friction of the coarse emery wash it well, and grind it thinner on the

glass plate with fine emery, and finish off on the Water-of-Ayr stone. If the section is strong enough to bear it, it should be removed from the slip on which it has been ground, and mounted on a clean slip. Warm the slide over the lamp sufficiently to melt the balsam, and push the section off with a needle into a cup of turpentine, and wash it carefully with a small, soft brush. Now pour a little balsam and benzole on the clean slip, put the section upon it, add a little more balsam, and cover with a circle or square of thin glass.

Sections of bone or horn must be first cut with a fine saw, and ground down in the same way, only *no emery* must be used, and the iron plate will not be required, as the Water-of-Ayr and Washita stones will prove sufficient. Before such sections are mounted, they should be soaked for a day or two in balsam and benzole to render them perfectly transparent.

Sections of soft rocks, and sedimentary rocks generally, are prepared and mounted in the same way, only *no emery* must be used, or it will imbed itself in the section and cause false appearances under the microscope. Most sedimentary rocks can be finished on the Water-of-Ayr stone. Some very friable rocks, or substances such as boiler incrustations, which readily disintegrate on the grinding-stone, must first undergo a preliminary hardening. Two hardening solutions are generally made use of—balsam and benzole, or a solution of shellac in alcohol. The latter is much the better of the two. The solution should be quite limpid. For soft limestones a soaking of two or three days will be sufficient, but a piece of boiler incrustation will require to be left in the solution for at least a fortnight. When the rock is thoroughly impregnated with the hardening solution, take it out, and put it to dry in a warm place until the solvent has evaporated, leaving the balsam or shellac in the pores quite hard.

Sections of rocks which contain organisms—such as foraminifera, should not be ground very thin, or most of the fossils will be ground away, leaving the section quite useless as a specimen.

Most thin rock sections photograph better by polarized light, as the structure is thus much better shown. Sedimentary rocks, even white limestones, stop a great deal of light, and will require a long exposure. Such sections are always much improved by a few days' soaking in balsam and benzole, to render them more transparent.

LESSON XII.—PREPARING CRYSTALLIZATIONS FOR PHOTO-MICROGRAPHY.

Most chemical crystals are mounted in balsam, as they are usually viewed by polarized light; but where this is inapplicable, or when the crystals are soluble in balsam, this medium must not be employed, and the crystals must be simply evaporated from an aqueous or alcoholic solution on a clean glass slide, and covered with a circle of thin glass. The majority of chemical salts are soluble in water, and when typical crystals are not required, the addition of a little gelatine to the water will usually produce larger, and in some cases more beautiful forms. However, as the genuine typical forms will be generally required in a photograph, it is best to use nothing but distilled water, or pure alcohol, in making up the solutions. To obtain typical crystals, the solutions should not be concentrated, but normal, and the evaporation of the salt should not be accelerated by too much heat. As a general rule, the most perfectly formed crystals are obtained by very slow evaporation in a cool place. Many salts, if evaporated in a hot room, or over a lamp, give nothing but a confused mass of amorphous forms. It is often better, instead of applying heat to a drop of the solution on a glass slide, to make a hot solution in a test-tube, and evaporate a few drops slowly on the glass slip. Arborescent crystals, no matter how beautiful in themselves, are a great nuisance when the student wishes to prepare the typical forms for photography, and they may be avoided by allowing the solution to crystallize out slowly. Potassium bichromate, if crystallized rapidly, either over the lamp or from a hot solution, usually gives arborescent forms; but when evaporated in

the cold, the characteristic prismatic crystals are obtained. All salts crystallized from an alcoholic solution should, as a general rule, be evaporated in the cold. As an example of this, magnesium platino cyanide, when evaporated from an alcoholic solution rapidly, gives only an amorphous red mass. To obtain the prismatic crystals arranged in rosettes, the solution must be evaporated slowly in a cool room free from draughts.

White arsenic, As_2O_3 , may be obtained either from its aqueous solution, or by sublimation. The latter mode gives more brilliant and regular crystals, but is more troublesome. A small portion of arsenic

should be put in a short test-tube about one inch long, and a glass slide laid over the top. On applying heat, the crystals will form on the sides of the tube and on the slide. By a little careful manipulation with the spirit lamp, the bulk of the crystals may be driven from the sides of the tube and made to crystallize on the glass slip. They should be covered with a circle of thin glass—no balsam must be used, or they become too transparent to photograph. The following cuts, photographed from slides of .001 grain, and .002 grain of arsenic, show the general form of the crystals.

Strychnine is very insoluble in water, so



CRYSTALS OF ARSENIC, FROM A DEPOSIT OF .002 GRAIN.

it should be crystallized from its dilute alcoholic solution. The form of the crystals is the octohedron, or square prism—usually the latter. As it dissolves in balsam it should be mounted dry. With a solution of picric acid strychnine yields hook-like crystals, which may easily be photographed with a low power.

Brucia must be crystallized from alcohol. The crystals are oblique rhombic prisms. It dissolves in balsam rather rapidly, so should be either set up dry or in castor oil.

Atropine, caffeine, and narcotine crystal-

lize in needles. The former must be mounted dry. Morphia, and morphia chloride, sulphate, and acetate may be crystallized either from water or alcohol, and mounted in balsam.

Quinine sulphate gives a profusion of silky needles from a dilute alcoholic solution. Owing to their delicacy they are difficult to preserve, but may be mounted in dilute balsam and benzole.

Sulphur must be dissolved in carbon bisulphide. The best crystals are obtained in winter; but at all times of the year the

solution must be evaporated in a room quite free from draughts, and as cool as possible. These crystals must be photographed by reflected light with a low power. Salicine is a very favorite microscopic object; but the splendid discs usually seen on slides are only modifications of the typical acicular crystals. The real forms are best obtained from a dilute aqueous solution, which may be hot. If a little gelatine be added to the solution, delicate discs form on crystallization, which are seen to consist of needles radiating from a common centre. Fusion of the dry salt

gives only coarse discs, but if a concentrated aqueous solution be made, and evaporated over a lamp until fusion just commences very delicate discs of a larger size may be obtained. One method of obtaining fine discs is to put a solution of salicine in gelatine on a glass slip. Warm the slip over the lamp for a few moments, and then pour the solution off; enough will be left on the slide to form a thin film. The film is then pricked in several places with a fine needle, and immediately crystallization commences, from each prick as a centre, and goes on all



CRYSTALS OF ARSENIC, FROM A DEPOSIT OF '001 GRAIN.

over the slide. The whole is at once covered with balsam and benzole, and a thin glass square gently pressed on. If not covered at once, the crystals become opaque.

Santonine and phloridzine are crystallized from an alcoholic solution, and may be preserved in balsam.

Here our Lessons in "Photo-micrography" are brought to a close. The student must once more be reminded that skill in manipulation of the microscope will not by itself produce the best results. There must

be not only expertness in each photographic operation, but an intelligent understanding of the *why* of each process. Photography as a science must be studied by itself, and for itself; for it is only when an intelligent understanding, both of microscopy and photography, is gained, that photo-micrography becomes worth pursuing.

WHAT is the proper price for one dozen cabinet photographs?

Photography for Lady Amateurs.

BY F. J. ERSKINE.

FOR many years photography was a seal-book to any but those of wealth and leisure, or making it their profession. A donkey-load of apparatus and some most fearfully poisonous ingredients were required. The baths left ineffaceable stains on the fingers; the whole apparatus was cumbersome, heavy, and costly.

Makers of photographic appliances are now making up tourist sets of quarter-plate size, and more expensive ones to take half-plates. A whole set, with camera, tripod, three double dark backs, each holding two dry plates, chemicals, and all requisites, can be obtained from £4 4s.

Many will say, however, that a properly fitted dark room is necessary; but although, if possible, it is best to requisition a dark cupboard or attic for a "den," it is by no means indispensable. When away from home, a ruby glass lantern should be carried, and light may be effectually excluded from the plates by developing at night the negatives taken during the day. If a lamp or the moonlight comes through a window, a sheet of brown paper pinned across with drawing-pins will effectually make all sure. Apparatus required: Three or four developing-trays of ebonite, one being legibly marked "hypo;" a bottle of pyrogallie acid, a small drop bottle for containing the ammonia bromide solution, a jar containing hyposulphite of soda for "fixing," a couple of graduated glass measures for fluids, a box of scales and weights, some bromide of potassium (useful in case of over-exposure), a small package of alum to clear and harden the gelatine film, and a nest of three developing-cups.

A certain amount of care is requisite in the use of the dark slides. Each should have its own separate case of black American cloth, fastening with buttons, and when taken out of the case it should be covered with the focussing cloth. More caution is required in the brilliant days of summer than at other times. Some people say that the sun is not as bright now as some time

ago. All I know is that, if dark slides are carelessly exposed to the summer rays, the plates run a very good chance of being fogged, and it is very aggravating, when pains have been taken to get a good view, in developing to find out all the trouble has been wasted on a fogged plate.

It need not be taken for granted that, because a person cannot draw, she is deficient in artistic feeling. Most people can pick out a pretty "bit" to photograph.

The weather which is best for photography is when there are gleams of sunshine, with plenty of clouds about to give the requisite soft variation of light and shade. A cloudless sky and a hot sun are not good. A photograph should never be attempted with the sun shining on the lens, as fogging is certain to ensue. Many beginners spoil their plates more by under-exposure than by over. Hearing of instantaneous photography of races, Flying Scotchmen, and other miracles of rapidity, they must needs give their unfortunate plates so short a time that no image can be impressed.

In the first place, the plates must be put in the slides. It is as well to decide how many photos. to take, and not have more plates out of the boxes than are absolutely necessary. The slides are parted by divisions of blackened metal. A plate is first laid prepared side downwards, the metal division put in with the spring piece uppermost. Then another plate with the prepared side facing the operator, two tiny clips are pushed forward to hold the plates down, the shutters are closed, and all is ready. N. B.—Of course this must be done by ruby light.

I may here give a practical hint.

Write, stencil, or otherwise mark the shutters A, B, C, etc. The object of this is to avoid exposing the same plate twice. I went one day to photograph the inmates of an incurable home, and, after the general amount of putting in a good light and stacking the patients who were movable on the steps, I got them quiet and exposed my plate. After this I got the superintendent and the home cat, posed them prettily, took off my lens cap, and went home rejoicing.

I developed, out came faces black and well; but a most singular muddle was apparent, even by the dim light of my red lantern. As soon as safe I examined by naked light. Horrors! The cat's tail was meandering over a couple of the patients' faces. The garden seat and brick wall were in apparently mid-air, and a general confusion was visible. Since then I always mark the slides, and would advise others to do the same.

A tourist camera is generally on the "bel-lows" and "folding type" system, so as to be compact. In some provision is made so that the lens screws in either way, thus saving a separate package. The travelling stands are composed of ringed detachable sticks, three in number, which joint on to a triangular top. The camera is attached by a small thumb-screw.

Lightness has to be considered; but this very lightness is an intolerable annoyance if there be much wind. It is to be hoped that some more steady arrangement may ere long be introduced.

The focussing cloth is generally of either black alpaca or velvet; velvet being more opaque is much the best.

To take a photograph in the field or open country the apparatus requisite is generally held in a wallet or satchel comprising camera, stops, two double dark backs, or three, tripod top, thumb-screw and focussing cloth. The total weight may be 5 lbs. The legs of the tripod are carried separately. Arrived at the place of operations, fit the stand together, unfold and adjust the lens of the camera, connect the two by the thumb-screw and the camera is all right. Focussing is done either with a screw adjustment and winch handle, or by slackening the screw belonging to the sliding side of the camera. The screw adjustment is about 15s. extra. Sliding adjustment is nearly as good. The lens-cap must be taken off and the ground-glass screen secured by its clip. This screen occupies the same space as the plate does when the shutter is raised; so the carefully focussed image thus falls exactly on the plate. If indistinctness is observable by the edges, a stop inserted will condense

the light, and although it will darken the picture a little, will give the requisite sharpness. No picture should be taken without a stop. In most lenses revolving stops are inserted; this is a great advantage, as divided stops are very easy to lose. The images being clear and well defined, the glass screen is turned back on its hinges, and the dark-slide inserted, being carefully covered with the focussing cloth. The lens-cap is in position. If a sunny day with light clouds, wait until a cloud passes over the sun. If windy and there are trees about, wait for a quiet moment. Carefully draw up the slide, uncup the lens, letting hand and lens-cap fall down. Give from two to five seconds (counted), cap the lens, shut down the slide, and, after noticing the distinctive mark, repeat the process as many times as you have plates.

To develop go to the dark room. Light the ruby lamp. Carefully exclude all white light, and place the plate in a tray of water (plain hard water will do) to swell the gelatine and render it more easy to develop free from spots. Measure out three grains of pyrogallic acid and dissolve in one ounce of water. Place this in one developing-cup. Drop into another three drops of the ammonia and bromide solution from the drop bottle; take out the plate carefully, and put into another tray. Pour the pyrogallic solution over with a kind of swinging motion, so that it covers the plate entirely. Pour the solution from the tray into the cup containing the ammonia bromide and bromide solution, then, with the same "swinging" motion, return the mixed contents upon the plate.

If the exposure has been of the right duration, the picture in a few seconds will begin to appear. Black lines and patches will appear, and in a few seconds the details will be out. In a negative everything white is black. If a landscape is taken, the sky will be black, and the trees and houses white and gray black. When all detail is fully out, which may be known by looking at the back of the plate, if a faint representation of the picture is visible, the plate must be washed—either douched from a jug or held

under a tap for a few minutes. It should then be placed in a strong solution of alum and water for five minutes, then rinsed and dropped into a fixing bath of freshly made hyposulphite of soda (about a dessert-spoonful of hypo. to a pint of water). Hypo., as it is technically called, dissolves out all the sensitive ingredients remaining unacted upon, and renders the negative impervious to light. It may now be well washed, and examined in daylight. All the lights, it will be seen, are reversed, the deepest shadows being plain, white, clear glass.

The ammonia and bromide solution mentioned above consists of—

Bromide of potassium, . . .	2 drams.
Water.	4 ounces.
Strong liquid ammonia, . . .	2 “

This must be kept in a glass stoppered drop-bottle. Above all things, keep dishes, cups and all utensils perfectly and thoroughly clean—never grudge water. The best books on photography are not very expensive. Capt. Abney's *Instruction in Photography* is invaluable

Photography is not difficult. It requires care and study, and cannot be done off-hand any more than any other pursuit; but there is no sham about it, no copying and imitating. All is straightforward, and as a fascinating pursuit it has no equal.—*The Queen.*

The Soda Developer.

As I have been working in a not too roomy tent in the hot weather of this summer I experienced no little inconvenience from the fumes of ammonia, so I decided to give a trial to some other alkali. I tried first of all potash, but soon gave that up, owing to the “bottle-stout” character the developer acquired, and because of the unpleasant color of the resulting negatives. I then tried soda, and of this I cannot speak too highly. I would not willingly return to ammonia. I do not mean to say that soda has no disadvantages, for it undoubtedly has; but its advantages very greatly outweigh them.

In the first place, it is much slower in its action, though I do not think it slows the plate; in fact the result seems to be the reverse. I purposely under-exposed two plates, developing one with ammonia and the other with soda, and the latter was by far the better negative and a quicker printer; but it takes from eight to ten minutes to get sufficient density. Personally I do not mind this, as even with ammonia I like a slow developer. This, however, may be a serious inconvenience to a professional photographer in a studio.

The advantages of the soda developer are its extreme cleanliness and brilliancy of the negatives without hardness, even in under-exposed plates. I exposed a plate of a group which turned out to be under-exposed, and I am perfectly certain that with ammonia I should have got an unprintable negative. I enclose an under-printed proof and also one of a landscape. I gave this four seconds in order to get detail in the near trees, and I think you will agree with me that there is a fair amount of detail in them, considering how much there is in the distance.

Some of your correspondents have complained of frilling. I have never had a sign of it, and have been using four makers' plates. I use the chrome alum of citric acid before fixing (as recommended in the *Journal* some six weeks ago), but no alum afterwards.

The constancy of the developer is a great charm. An amateur who makes up a developer with ammonia, using (say) half, and has no occasion to use it again for some time, and then only at intervals, really knows little of its strength.

I have not succeeded in doing away with the bromide, as some of your correspondents recommended; for I could get no density except with an excessive amount of pyro.—five or six grains to the ounce. I use anhydrous carbonate of soda, as I then know where I am, and it is much more soluble than washing soda. I employ the sulpho-pyrogallol of the Platinotype Company or a similar compound, and make up the soda thus:

Anhydrous carbonate of soda, 6 drams.
 Sulphite of soda, . . . 3 "
 Ammonium bromide, . . 1 dram.
 Water, 9 ounces.

To develop a whole plate take—

Sulpho-pyro, 60 minims.
 Soda solution, . . . 1 to 1½ ounce.
 Water, 3 ounces.

I add the soda by degrees in the ordinary way. The development is under far more control in my hands than the ammonia was. I also have handy ten per cent. solutions of soda and bromide, but very seldom have to use them. I find it almost impossible to get a hard negative or to fog one.

On reading over the foregoing I find I have only mentioned one disadvantage of the soda, viz., its slowness. I was going to add the difficulty of getting density, but this is entirely obviated by the use of a bromide. W. N.

P. S.—The negative becomes a cold gray with not a trace of yellow.—*British Journal of Photography*.

Patents.

A CORRESPONDENCE at present going on in our columns respecting a certain invention for which a patent has been obtained prompts us to offer some remarks upon patents, in what they consist, and the subjects for which they can be obtained.

A patent is virtually a monopoly conferred by the State upon an inventor, for giving up to the public upon certain terms the fruit of his invention. The State in this case is the trustee of the public. In effect it says to the inventor: "You have an invention of which the public as yet knows nothing, but, as it will be of great utility, and it is undesirable that it be forever retained as a secret, we will grant you a monopoly in its manufacture and use for a certain number of years, provided you will publish such a clear description of the same as any intelligent man can quite understand." Thereupon the inventor divulges his secret, makes payment of certain fees—at one time so exorbitant as to be deterrent, but now

quite moderate—and the State protection is extended to him. This protection implies that the invention is that of the individual making the application, that it is one for a useful purpose, and that it is new in the sense of no prior publication having been made.

Some confusion appears to exist in the minds of many persons as to what forms the distinction between a subject for a registration and one for a patent. Broadly speaking, an ornamental design may be protected by registration; a piece of mechanism is a subject for a patent. The now extinct Otte-will's registered folding camera was, as implied in the name, made the subject of a registration, and, because of ignorance on the part of the public, no attempt at infringement was ever made, as it was believed that the protection of registration was all-sufficient. But had any case ever been brought before the courts it would have inevitably broken down, as it would then have been shown that the protection of registration applied only to such a design as could be drawn upon a flat surface, and not to any piece of mechanism involving configuration of parts. If an ornament, such as a floral or geometric design, had been introduced upon the top or sides of the camera, *that* could have been protected by registration; but the camera, as a camera, is a subject for a patent.

A good and valid patent may be obtained for anything formed entirely out of a well-known and even patented parts, provided these parts are combined in such a manner as to form an apparatus not previously in use. But, while the inventor of such combination can obtain a patent for it which shall be valid, he will not be at liberty to make use of it until he has previously made arrangements with the proprietors of the respective parts referred to, provided they have been patented. In the specification of his invention he virtually says: "I take that wheel which has been previously well-known, and I combine it with this lever and that pulley, both also well known; and by this combination, not previously known, I produce certain effects.

I claim the combination, not the individual parts of which it is composed, as my invention."

A new application of a previously existing invention is also permissible under certain circumstances. The yellow alloy known as brass is composed of copper and zinc, and in compounding these two metals it would be difficult indeed to specify proportions that have not been employed for some one or other purpose; yet when Muntz obtained a patent for the application of a particular brass—the proportions of which it was formed having been specified—to the sheathing of wooden ships as a substitute for the copper previously in use for that purpose, an outcry arose, and much litigation ensued. The courts, however, ultimately decided that the Muntz-metal patent was valid. From this we may learn that minute differences in not merely the nature, but in the application, of an invention are recognized in the Vice-Chancellor's court when patent cases become subjects for adjudication—*British Journal of Photography*.

Intensification with Mercuric Chloride and Sodium Sulphite.

IT is only within the last few months that it has become known that sodium sulphite (a salt which has already done good service in the pyrogallic developer) may be useful in connection with the intensification of negatives.

If a negative be bleached or whitened by being soaked in a solution of mercuric chloride, there are several reagents which may serve to blacken it; ammonia or Monckhoven's argento-cyanide of potassium solution being often preferred, because they yield delicate gradations of tint, which yield soft and brilliant prints. As a new means of darkening the whitened negative, sulphite of soda is now proposed.

Scolick, of Vienna, has made exhaustive researches with this intensifier, and he, in the *Photographische Correspondenz*, recommends the following method of working: The fixed and well washed negative is al-

lowed to remain in the mercuric chloride bath until the film is thoroughly whitened, the following bath being recommended:

Mercuric chloride,	1 part.
Potassium bromide,	1 "
Water,	50 parts.

This solution may often be diluted with advantage, even to the extent of four times its volume of water, in order that it may not act too energetically. Still, a mercuric chloride solution made up in accordance with any other of the usual formulæ may be employed. The bleaching being complete, the mercuric solution is rinsed off, and a thorough washing at this stage is not required; indeed, the washing may be altogether dispensed with. Having now immersed the negative in a mixture of equal parts of saturated solution of sodium sulphite and water, the darkening action will be seen to take place steadily and slowly, just as when ammonia is used. No special precautions are necessary, any signs of irregularity in the action of the sulphite disappearing as the action becomes complete; and, as far as observation has extended, the negatives intensified as described are permanent.

As regards the chemical reaction which takes place, Dr. Eder gives the following particulars:

The whitened negative contains mercurous chloride (calomel), and this is reduced to the metallic state by the sodium sulphite, just as appears to be the case when cyanide of potassium is used; thus the method now described may be regarded as analogous with Monckhoven's argento-cyanide of potassium method. Mercuric chloride is not reduced in the cold by alkaline sulphites, because stable double salts are formed; still at a boiling temperature, reduction sets in, the mercurous chloride being first formed, and then metallic mercury. The above fact explains why it is unnecessary to wash away all traces of mercuric chloride before treating with sulphite of sodium.—*London Photo. News*.

TRY DERMALINE.

Sensitizers in the Developer for Emulsion Plates, etc.

WE extract the following from the account of the Photographic Festival and Exhibition at Frankfurt-on-Main :

Dr. Eder's paper, which will be published in detail in the *Photographic News*, brought out a discussion on "sensitizers in the developer for emulsion plates," and Herr Haake, of Frankfurt, remarked that he had known good results to follow the use of the following bath after exposure and before development :

Hyposulphite of soda, . . . 1 part.
Water, 1000 parts.
Citric acid, 3 "

The solution is allowed to stand at rest for some days, and then it is filtered. An immersion of one second proved sufficient in ordinary cases, and the iron developer was used. It was estimated that the sensitiveness was three times more than in the case of plates that had not been treated. Dr. Schleussner spoke of the value of an addition of hyposulphite to the oxalate developer, and Dr. Eder said that Scolick, of Vienna, had treated some under-exposed plates very successfully by dipping them in extremely dilute hypo solution (without citric acid) previously to development. Reference was also made to a secret preparation sold for adding to the developer ; still this proved to contain no hyposulphite, but formic acid and other substances.

The question was then raised as to why plates which have been kept a long time show signs of fogging round the edges ; and Herr Geldmacher said that the quality of the gelatine used had no bearing on the point. It was the opinion of Herr Müller, of Munich, that mischief arose mainly from the action of damp ; in fact, he found it advantageous to keep the boxes and packing materials in a warm room until required for use ; but Herr Kindermann attributed the mischief to the presence of hyposulphite in the paper or card.—*London Photo. News*.

TRY our New Transparency Plates.

A Soda and Potash Developer.

[From the *Photo. News*.]

SIR,—It seems from correspondence that there is much discussion as to the best developer. I have one that I love so much that any gelatine plate that would not behave in a most becoming manner towards it I would at once condemn and discard.

The way I proceed with this developer is as follows. I make saturated solutions of potash (carbonate), soda (sulphite), and soda (washing).

These I name 1, 2, 3, which means, take—

Sat. sol. carb. of potash,	1 ounce.
" sulphite of soda,	2 ounces.
" washing soda,	3 "

To these I add 48 grains of bromide of potassium, dissolved in 18 ounces of water, and label this—"Soda Solution."

Now dissolve a quarter of an ounce of citric acid in 30 ounces of water, and add one ounce of pyro and label this—"Pyro solution."

To develop a half plate, take—

Pyro solution,	. . . . . 2 drams.
Soda solution,	. . . . . quant. suf.

Never soak the plate in water previous to development, as it is one cause of frilling.

Anyone who tries this developer I feel sure will value it as I do ; it has every virtue and none of the faults of the soda or potash used alone.

I am, sir, yours truly,

HENRY LAW.

WE see recommended a new use for the familiar "hypo." In a twenty-per-cent. solution, with the addition of a little carbolic acid and glycerine, it is said to be of great value as a dressing for contusions and bruises, the method of use being to saturate a cloth with the solution and keep constantly applied.—*British Journal of Photography*.

The Boxing of Dry Plates.

MR. NEWTON has kindly given us a revised copy of his remarks before the Society of Amateur Photographers of New York at the meeting of August 12, published in *Photography* as follows :

I have had specimens from almost every maker in the United States and some of foreign make. Some of them are from one to two years old and even older, so that I think I am pretty well qualified to determine whether plates two years old or one year old are as good as those from three to six months old, as put up in packages in which they are sold.

Some fifteen or eighteen months ago I received specimens of plates from one maker who was making very good plates, but after I had kept them for a few months they began to show decided marks of change. The plates were packed in a cardboard box with a strawboard paper frame between each plate.

Where the frame came in immediate contact with the film its effect was distinctly shown, and its damaging action on the film in radiating inward from the point of contact toward the center of the plate could also be seen. The plate was thus injured to such an extent that eventually it was impossible to make a passable negative.

I took some of these frames out of the box and went through a very careful examination of them ; and I found them completely loaded with hyposulphite of soda.

Now I do not believe that any plates as sensitive as the gelatine plates are can be confined in an air-tight box in such close proximity to a substance so potent in its deleterious effects as hyposulphite of soda without serious injury. That this is so I have demonstrated to my own entire satisfaction.

I wrote to the manufacturers of these plates and explained the experiments I had made and advised them to test also. In a few weeks they replied they had made experiments but had failed to find the hypo. That statement made no impression on my mind, as it did not change the fact that I

did find hypo. Not long after that these manufacturers commenced to pack their plates by running a cotton wrapping twine or cord alternately at the ends between each plate, and I believe this is their present method of packing.

Nr. Newton then exhibited two plates, made by these parties, one of which had been packed in a box in contact with a strawboard frame ; the other, of the same make, about six months old, had been separated by a cord.

The fog around the edges of the first plate was plainly visible, in reality making a vignettéd negative, the effect of the paper frame having penetrated inward beyond its border. On the second plate packed with a cord there was no such fog, and the negative was clear and brilliant throughout.

Regarding these exhibits Mr. Newton said, "you need to keep the two plates together in order to compare them. They fully illustrate what I wish to explain. It is a very difficult thing to put up a plate that will keep two years. There can be no question but that the action you notice on these plates came from the cardboard frames between them." He exhibited another plate which had the color of a rainbow around the edges ; regarding it he remarked, "you will observe that during development the silver has precipitated in a metallic form in a rim about an inch wide around the edge of the plate.

I have another make that was put up in a grooved pasteboard box, where during development a similar precipitation occurred over the entire surface, not evenly, but as a general thing all over the plate. These plates being in contact with nothing but the edges of the box and the grooves, still deteriorated rapidly, proving conclusively to my mind that the material of which the boxes were made was not suitable. It is very important for manufacturers to know beyond question whether their plates are going to keep. Time alone can determine that question in reference to the different methods of packing. The manufacturers of course do not keep them and they are used up generally in a short time by those who pur-

chase them. But sometimes a man wants to go on an expedition—to South America or Egypt for instance—and he wants to take plates that will last two or three years; he wants to take plates along that he will be sure will not be worthless after a year's keeping.

The next plate shown, he said, was an excellent plate; they were separated in the package by tissue paper, but the defect he called attention to was where the edge of the plate came in contact with the paper box the edges were slightly affected at both ends. He thought the pasteboard box must have been full of hyposulphite of soda, or some other deleterious substance. Regarding another plate shown he said, "a year ago it was an excellent plate and made beautiful negatives. This one (handing it around) has a transparent frame around it, and where the cardboard frame comes in contact it is insensitive. The action inside of the frame made the film unfit to make a passable negative. All of the plates seemed to have been affected quite through the film. I tried three or four and found it impossible to make a picture on them. As soon as the development begins to act, it acts all over. The specimens which I have brought illustrate plainly what I wish to show, namely, that it is uncertain about the keeping qualities of these plates for any length of time with the present methods of packing. I have seen them kept in a holder where they do not come in contact with anything, and make, after a long lapse of time, when used, beautiful negatives, which would indicate that the trouble is not inherent in the plate. Another manufacturer who had a great deal of trouble of this character with his plates tested the paper surrounding them and the paper frames; he found, as I had found, that they were full of hypo. He then substituted for the paper frame strips of white wood laid between the plates at each end."

DAME RUMOR has it that fine cabinet photographs are being made in large quantities at Philadelphia for \$2 00 per dozen.

Paragraphic Pencillings.

BY G. H. LOOMIS.

THE October issue of the BULLETIN lies before me with its heavy border-lines of black, sadly reminding me that its founder and editor is no more.

Though aware that for several months he had ceased his business activities for a season of much needed rest and recuperation, I did not think his return to New York would be followed so soon by the dread messenger, summoning him from our earthly attachments and employments to resume them no more forever. So expressive and kindly appreciated were the messages sent in response to the announcement of his death, that I will not at this time write more than to endorse them as the sincere and heartfelt valuation of the few, representing many of his social, literary and business acquaintances widely scattered throughout the States and over the seas. His loss will be much lamented by all practitioners in photography, whether regulars or amateurs, for it is but just to estimate his services to the art in all that pertains to discovery and practical application as exceeding any of his co-workers.

The writer's correspondence with Mr. Anthony has been quite extensive, and though in the main of a social nature, very few are the letters that do not contain allusion or comment upon matters relating to the progress of photography, or the success or failure of its devotees.

He watched with continuous interest everything written about or relating to the art, and whenever a new thought was awakened it went to his laboratory for a practical test. His formulas were well studied and intelligent, and the great success of his preparations prove their relative value better than written recommendations.

As has been truthfully remarked he was of a generous nature, not alone in financial need, but contributing cheerfully the fruits of his observation, investigation and experience in helping out of hard places those who were new in the art, and the more advanced practitioners who often consulted

him for relief in difficulty. The writer of this well remembers consulting him relating to an ugly acting solution long before the BULLETIN became a channel of communication, and of the painstaking effort he made in a three-page letter to *clear up* the brain of the operator, which was more befogged than the bath. It was a courteous reply and explanation to a then unknown correspondent. It might have been, and probably was, the pivotal point of a pleasant social and business acquaintance of twenty-five years. Henry T. Anthony was not faultless, and he would not have us so eulogize him, living or dead, but we shall be glad to fill his place in our circle of valued friends with one so well deserving of respect and confidence.

I need not assure you that among the galleries there has been little or nothing doing for the past few weeks, the political campaign absorbing all attention. The *caricaturists* have had a monopoly in the picture business, and judging from the lively competition witnessed there has been an immense business to somebody's profit.

As most of these were made from *original* photographs, both subjects and artists doubtless feel a flush of flattery—so well are they posed, lighted and colored; nobody to our knowledge has sought either protection or redress under the copyright law, though Butler has an eye to the windward.

The November meeting of the Boston Association occurred at Black's studio on the 10th, President Glines, Secretary Whitney and a very few others being present. The chief point of consideration was the decline of interest and nonattendance, almost if not quite suggestive of dissolution. No questions being presented, the faithful few exchanged salutations, indulged in some social conversation, and at an early hour went home—at least we suppose so. We ought to say, however, that there was one point of attraction and observation that proved interesting, and that was the little "Fairly Camera," which was informally introduced as a new, useful and really ornamental accession to the studio, and perhaps we ought to add the boudoir, as it is suffi-

ciently "a thing of beauty," as well as utility.

Its remarkable compactness and portability, exceeding anything of the kind yet invented, renders it a most acceptable and serviceable travelling companion for amateurs and others, however unskilled and inexperienced in practical photography. After examining its simplicity and convenience it is pronounced the embodiment of excellence, and the question of cost is the only one that will stand between proprietor and purchaser. This important item of information is easily obtainable, we presume, on application to the local photographic stock dealers or of the manufacturers, Messrs. E. & H. T. Anthony & Co.

Under an Umbrella.

STROLLING, recently, on one of the South London Commons much frequented by the itinerant photographer, we spied one of the fraternity with an enormous carriage-umbrella under his arm. Our curiosity was stimulated, and we watched his proceedings. He was not long before he caught a sitter, and while he focussed and exposed the plate, his assistant held the umbrella over the sitter. "I wouldn't be without that umbrella for anything," said he to us afterwards. "Why, I can take 'em in the open sunshine, and get a nice shade over the face, and they come out with the eyes fust-class." This was very likely, but the *tout ensemble*—the simpering sitter, and the anxious assistant shielding her almost lovingly with the umbrella—made an extremely funny picture, quite worthy of the detective camera.—*London Photo. News.*

If any one desires to know what the Platyscope lens is capable of, let him call at 591 Broadway, New York, and see a frame of six photographs, boudoir size, of out-door groups and landscapes made by Mr. A. C. McIntyre of Brockville.

We never remember having seen anything finer either as to subject or execution. Mr. McIntyre in speaking of them says, "I have never seen or used a finer lens than the Platyscope."

Corrected Formula for Mr. Henderson's Precipitated Gelatine Emulsion.

TO THE EDITOR OF THE BULLETIN.

Dear Sir: Mr. A. L. Henderson desires me to have published the following as the corrected formula for his emulsion as given before the Sept. meeting of the Society of Amateur Photographers:

No. 1.

Nelson's No. 1 gelatine, . . . 5 grs.
Dis. water (slightly warmed), $1\frac{1}{2}$ oz.
Brom. of potass. (chem. pure), 180 grs.
Iodide of potass. (chem. pure), 2 grs.
Alcohol, (65) O. P. . . . $1\frac{1}{2}$ oz.

No. 2.

Nitrate of silver, 240 grs.
Distilled water, $1\frac{1}{2}$ oz.
Alcohol, $1\frac{1}{2}$ oz.

Half of No. 2 is converted into ammonia nitrate by the addition of ammonia 1 oz., or enough to redissolve the precipitate, and then mixed with the remaining half. The whole is next added to the bromized gelatine (No. 1.) a small quantity at a time.

The jar is now placed in water at 120° Fahr., 240 grains of hard gelatine added and melted, and, lastly, 10 ounces of alcohol warmed to 90° Fahr. is poured in, the whole being agitated by stirring with a glass rod.

The emulsion is then precipitated into a cake, which is washed, remelted and water and thymol added, when it is ready for use

Yours respectfully,

F. C. BEACH.

See also description of an improved process as follows:

Recent modification of Henderson's Precipitated Process for making Gelatine Emulsions.

No. 1.

Distilled water, 1 oz.
Nelson's No. 1 gelatine, . . . 5 grs.
Brom. of potass., chem. pure, 180 "
Iodide of potass., " " 2 "

The above is heated just enough to melt the gelatine; next is added—

Alcohol, 4 ounces.

No. 2.

Distilled water, 1 oz.
Alcohol, 4 ozs.
Nitrate of silver, 240 grs.

Both of the above solutions may be prepared by day or gaslight.

In the dark room, by a non-actinic light, such as a faint ruby light, three-quarters to one ounce of ammonia, 880 U. S. standard, is added to two and one-half ounces of No. 2, which converts half of the silver solution into ammoniated silver. This is next mixed with the remaining two and one-half ounces of No. 2, and the whole is poured into No. 1 and well stirred. Bromide of silver is thus formed, and it only remains to raise the temperature and add gelatine to complete the operation.

The emulsion, in a beaker, is next set into a water bath, the temperature of which is 120° F., and 240 grains of dry, hard gelatine (Heinrich's) is added, the liquid being continually stirred until all of the gelatine has melted.

It is then set away to cool, and in a short time the silver and gelatine coagulate at the bottom of the beaker into the form of a cake. The alcohol, about 8 ounces, is next poured off and preserved for future use.

The emulsion cake is then broken up into small pieces and subjected to a two or three hours' washing in constantly changing water; it is then remelted by means of the hot water bath as before stated, and enough distilled water added to increase the bulk up to from eleven and one-half to fourteen and one-half ounces; then—

Thymol, 6 grains.
dissolved in—

Alcohol, 4 drams,
is added, and the emulsion is complete; after being filtered it can be flowed upon plates.

If it is desired to mix up a small batch, one-half or one-quarter of the pellicle cake may be remelted, and the proper proportion of water and thymol added. The pellicle cake will retain its sensitive qualities for any length of time if kept in the dark.

Some of the advantages of the process

are that successive batches of emulsions of uniform sensitiveness can be made with great certainty; emulsions can be economically made; less alcohol is required; the gelatine extracts all the water from the alcohol, leaving it free (or nearly so) from the nitrates, which will be found crystallized at the top of the pellicle cake; lastly, the alcohol can be continually used over and over again as a vehicle to promote emulsification, provided it is carefully filtered each time and added to the silver and bromide in the dark room, and allowance made for the ammonia it contains.

Paper Negatives.

At a recent meeting of the London and Provincial Photographic Association, Mr. W. Turner gave the following as his method of making paper negatives: The picture or drawing to be copied is made translucent by means of lard diluted with turpentine—one part of lard to three of turpentine.

The mixture was then boiled for three minutes, which he claimed killed the grease, and it was then rubbed over the drawing. When surface dry the drawing was placed in a printing frame with sensitized silver paper, and a negative made, which was fixed in an old hypo. bath rich in silver, and washed in the usual way.

The plain paper was prepared by floating Saxe paper on the following:

Sodium chloride,	200 grs.
Gelatine,	30 "
Water,	20 ozs.

Dissolve the gelatine and chloride separately, and mix; float three minutes. When dry, sensitize by floating one or two minutes on the following:

Silver nitrate,	1 ounce.
Citric acid,	1 dram.
Water,	14 ounces.

He stated that the paper would keep good for six weeks.—*British Journal of Photography.*

In case you forget, Mr. H. A. Hyatt of St. Louis has removed to more commodious quarters. See his "ad." on the first page.

Fall Lantern Exhibition of the Society of Amateur Photographers of New York.

On the 30th ult. the first Fall Lantern exhibition of this Society was given at their rooms, No. 1262 Broadway. Despite the disagreeable, rainy night, there was a large attendance, several ladies being among the audience. Mr. Wm. T. Gregg kindly furnished two of his lanterns, and successfully manipulated them. A variety of slides were shown.

Mr. Randall Spaulding exhibited a series of Arizona and Colorado views made by him a year or two ago on a geological and botanical trip in the West, some of which were admired for the grotesqueness of the scenery.

Several slides from negatives made by Mr. R. A. C. Smith with the Detective camera were interesting and life-like.

Mr. E. L. Wilson, of Philadelphia, contributed four slides of the exhibition buildings at New Orleans. Their mammoth proportions were clearly shown.

Mr. George G. Rockwood had some wet plate slides from negatives of interesting bits of scenery around New York, which were good.

Some of the best slides of the evening were those contributed by Messrs. James B. Metcalf, Mr. James E. Brush and Mr. D. Wright. Mr. Metcalf had used Anthony's transparency plates, the others Carbutt's albumen and A plate.

Views of Mr. Munn's Rustic Bridge at Llewellyn Park, and the entrance to the Park, by Mr. Metcalf, were commended for their clearness.

Messrs. Brush and Wright's views around Seabright, N. J., of some of the fine residences at that point, and of bathing scenes, were particularly admired.

Several slides were contributed by Mr. Levison, of Cooper Union, which comprised instantaneous views and groups.

Mr. R. Baker furnished slides of church architecture, which elicited favorable comment.

Mr. H. J. Newton supplied a number of

slides made on his bromo-collodion emulsion plates.

Some of the prettiest bits of landscape work were shown in slides by Mr. W. H. Bartholomew. He also exhibited a slide from a negative made by contact with a steel engraving without a camera, which was very distinct and clear.

The lantern afforded much instruction to those who were beginners at lantern slide making, as they were enabled to judge of the necessary qualities required in a good slide.

Among the audience were several prominent gentlemen, including Mr. York, a member of the British Association of Science, and also a large manufacturer of lantern slides in England.

In conversation with President Beach, he remarked that he had secured some 300 negatives of American scenery and other points of interest during his stay here, and that his establishment turned out 80,000 slides annually. He promised to send the Society, on his return to England, a series of slides from his negatives of points in and about New York, and before his return would endeavor to be present at one of the society's meetings.

The exhibition passed off very pleasantly, the new arrangement of the seats under the management of Mr. H. V. Parsell being quite satisfactory to all present.

The Society is to purchase a lantern of its own very soon, and a competitive exhibition of lanterns by different manufacturers is talked of. A proposition to inaugurate an exchange of lantern slides among the various amateur societies is to be considered.

The Bulletin for 1885.

The BULLETIN for 1885 is now in order. Subscriptions will be received at once, and those who are not already subscribers will receive an additional number by sending us their names immediately. In the case of ordering indirectly through a dealer we shall be equally well pleased. Two dollars with illustration, one without.

Coloring Transparencies and Photographic Cards.

MR. E. EDWARDS says: The first thing to be done is to prepare the paint. Get from any wholesale chemist a small quantity of different aniline colors or dyes, and dissolve them separately in spirits of wine, gradually adding the spirit until all is dissolved; dilute by about its own bulk of water, and add ox-gall until the colors flow smoothly from a camel's-hair brush over glazed paper: when this has been attained the colors are ready for use, and the painting may be commenced. It is advisable for the beginner to commence with a portion of the transparency which has the smallest surface of the same color, as it requires a little practice to lay on an even coat on a large surface, such as the sky or sea. If the color is piled on by degrees with dilute color it renders the laying on of a smoother coat much easier. It is as well to give the transparency a coat of varnish when the coloring is completed and quite dry. For coloring cards the colors should be laid on very dilute (especially the flesh color), and in successive washes until the desired color has been attained. The colors most useful are: Lemon-yellow, green, orange, red, blue, violet.

For flesh color—lemon-yellow and red. For different shades of green—lemon-yellow and blue. For lilac and purple—violet and red. For jewelry and fair hair—orange.

The commonest water color brushes will do.—*Scientific American*.

How to Photograph Microscopic Objects is the title of an exceedingly interesting and valuable series of articles that have recently appeared in these pages. They are published in the form of lessons from the pen of Mr. I. H. Jennings, who has very ably and lucidly described the delicate operations of photo-micrography. We propose to issue these chapters in pamphlet form, so that those who have not seen them in the BULLETIN may have a copy. They are handsomely illustrated, and will be duly advertised.

Gelatine Emulsion, Exposed to Sunlight. Loses its Solubility in Water.

BY V. SCHUMANN.

It is well known that a gelatine plate developed with pyrogallie acid will lose its solubility in hot water. Similar observations were made when the plate was exposed to sunlight only without developing.

This heretofore unknown condition I observed first on wet chloro-iodide of gelatine that had been standing in the window for some hours. The upper film could not be brought into a liquid state even by continued boiling in hot water. A skin had formed that even after immersion in water for several days and repeated cooking resisted its action and remained unchanged. I kept this emulsion skin afterwards for some time in water, but could not observe any decomposition.

Whether the change in the gelatine was due to the action of light or air I discovered by filling three dishes with different gelatine emulsions and exposing them to sunlight. The set film I had covered in the middle with a strip of tinfoil, in such a way that the light was securely shut off from the covered surface. After an exposure to sunlight for about two hours, I cut out small pieces from each—the covered and the uncovered film—and put these into an evaporating dish filled with cold water. After heating, the non-exposed emulsion dissolved rapidly and completely, while the lighted or exposed emulsion dissolved only to the upper film, which remained as a fine skin. This skin showed a remarkable elasticity; it could be stretched five or six times its length without tearing, and would stand continued boiling in hot water without any disadvantage.

The three dishes remained in the light, and during eight days I made repeated trials to dissolve it, and always with the same result.

After this I treated twelve other kinds of gelatine emulsions, which contained Ag Cl, Ag, Br, AgI, and their mixtures, in the same manner and have always found that

the surface of set emulsion loses its solubility in water when exposed sufficiently to light.

The washed gelatine emulsion will soon decompose when kept without any antiseptics. Iodized gelatine, for instance, became liquid at a temperature of 18 to 20° C. in four to six days. The wet emulsion, when exposed to light, shows an entirely different condition. I have exposed to light six baths with different mixtures of chloride and iodide of gelatine—tinted also with eosine—for several days and then removed to the dark room. There they are now and have remained for several weeks, and do not show any tendency to become liquid. Undoubtedly the chloride, freed by the action of the sun, has here an antiseptic effect, part of the same being retained by the wet emulsion. Possibly the iodine may also contribute to its preservation, because all experiments made repeatedly with pure iodide of gelatine gave rise to a decomposition of the iodide of silver. After continued exposure in sunlight the odor of iodine became very distinct; and the change in color of the emulsion, and also the appearance of a number of blackish-brown dots and circular spots pointed likewise to a decomposition of the iodide of silver.

It is not only the wet gelatine emulsion but also the dry which loses its solubility in water by exposure. I exposed a gelatine plate under a negative from one to one and one-half hours in sunlight, put the plate into a water bath, heated and fixed the same, washed and dried it. The pale violet negative showed a distinct relief and fine grain. I have repeated this experiment and observed the formation of a relief, and not only after fixing, but also after soaking the exposed plate. My gelatine plates being prepared without any extra mechanical appliances, it happened easily that the gelatine skin was destroyed by overheating of the water bath. Bubbles would form, and the film floated in small pieces. But even in such a case it can be easily recognized that the emulsion has lost its solubility.

How long set gelatine can be preserved by exposure to light, to what extent the sec-

ondary action of light observed by me will penetrate the emulsion, and what quantity would be unfit for a secondary preparation of plates I have not been able to determine as yet, but I intend to continue my experiments as soon as the sunlight will admit.*

About the Durability of the Bromide of Silver Gelatine Dry Plates.

BY H. BOLITSKI.

SOON after the introduction of dry plates it was affirmed that they would remain unchanged for years, and, as it appeared at that time, correctly. Some time later the fact was published by several photographic periodicals that plates preserved for two or three years were found in just as good condition as newly prepared ones. From my own experience I may say that I found plates to be in the same condition after keeping them for eighteen months. But since the sensitiveness of plates has been materially increased, observations have been made which show that plates working excellent and clear while fresh gave foggy and faint pictures after being kept for a short time. In some cases a week is even sufficient to change the plates, although it generally requires months and years.

Fogging of the plates over the whole surface is comparatively rare, but very often and almost in every case a darkening of the edges takes place, which according to the quality of the plates, their age or place of storage, is either confined to the outer edge or otherwise covers the greater part of the surface. Such plates, with defective edges only and good in the middle, can be used as well as fresh ones, but when this darkening effect has once commenced it is more than probable that in course of time the darkened edges will increase in size and fog the entire plate, making it useless. To form a correct idea, and not being satisfied with my previous experience and the communications of some friends, a short time ago I tried several lots of dry plates that I

had in my possessions a good while, well wrapped up and kept in a dry place. Almost every one of these plates showed a more or less darkening of the edges, some of them over an inch in width, and those particular plates were known to be of an excellent quality.

The middle was still clear. The less sensitive plates seemed to be in the best state of preservation; one kind, of ordinary sensitiveness, was after a storage of three years somewhat foggy, but still in condition to be used. All the plates showed the marks of the pasteboard or paper frames.

It is clear that these observations are in the highest degree disagreeable to the manufacturer of the plates, as well as to the purchaser, having caused losses and dissatisfaction to both. The purchaser accused the manufacturer, and the latter again the purchaser of ignorance, and truly both were innocent.

But, to answer the above correctly, we have to find *the cause of the evil*, and, if successfully found, we will be enabled to remove the evil itself.

Let us consider our case pretty closely, and we will find that the foregoing is not entirely new to us. The old wet process had a good many similar obstacles. If we exclude a premature action of light upon the sensitive plates, which as a natural consequence would produce fog, we have to mention five principal points not to be lost sight of. These are:

1. High sensitiveness.
2. Reducing material, not belonging to the sensitive film.
3. Bad air
4. Moisture.
5. Time.

Regarding No. 1 we would say that, to reach a high or the highest sensitiveness that can be produced by any method, had its difficulties in the wet process, requiring the purest of chemicals, and as much as possible neutrality in the collodion and the silver bath. If the latter was in the least too alcoholic fog would appear, provided that no other matter injurious to the process would combine with the sensitive plate,

* Translated by H. D. for the BULLETIN.

Something similar we have with the dry plate.

Dr. Eder says about this in his work, page 55.

"All efforts made to obtain highly sensitive emulsions lead finally to the origination of fog. Now that plates prepared with the most sensitive bromide of silver emulsion, even if free from fog in a fresh state—or, to be more correct, having only a slight and harmless veil—require only a trivial cause to render them more or less foggy, is very easily understood, the extremely sensitive granules of bromide of silver to light being just as sensitive towards other reducing agents, as practical experience has taught us. If plates of medium sensitiveness, with not fully ripe bromide of silver, and such of the highest sensitiveness, where the bromide of silver has passed completely into the grain, should be placed in the same box, the latter will spoil after a few weeks or months, while the former will remain in good condition. To find the causes of this change shall be the subject for our next consideration.

We might mention here that presumably the bromide of silver during ripening passes from the amorphous into the crystalline condition, in which it possesses not only the highest sensitiveness, but also less sensitiveness against many other materials. The condition of many other bodies led me to this supposition, and supported by this idea I have succeeded in producing the most sensitive bromide of silver emulsion with finer grain than it ordinarily possesses.

That certain organic matter existing or originating in some kinds of gelatine cause an immediate formation of fog is a well known fact, but it is also just as certain that this reducing matter may have its origin upon plates already made; the best proof of this being the large foggy spots in the middle of the plates, while the outer edges remain completely clear. These spots originate when the uniform drying process of the plates has been disturbed, some parts remaining moist for a longer time, or when they dry under a sudden change of higher temperature. In both cases decomposition

takes place upon the yet moist portion of the plates, which has a reducing action upon the bromide of silver. The fact that most kinds of gelatine which furnish, without any previous preparation, only a streaky emulsion, will give good results when previously well washed, proves that many kinds of gelatine already contain reducing matter. This washing, which I applied in December, 1882, for the first time, for a year and a half I considered to be an infallible means, but in the spring of 1884 I was convinced that there exist some kinds of gelatine where it is of no use, and which contain reducing matter that cannot be washed out by cold water.

(to be continued.)

Photograph of a Tornado.

M. J. DE WOLF has for sale a number of photographs of a tornado which passed 22 miles west of Howard, Miner County, Dakota, upon the 28th of last August, killing many people and destroying much property in its path. F. N. Robinson, of Howard, chanced to be taking some instantaneous photographs, when the tornado very fortunately came into range of the camera and was successfully photographed, the achievement being the first of the kind ever accomplished. The photographs represent a black twisting, vertical, aerial spout, at the top and bottom of which is a confused mass, cloud-like in appearance. Prof. E. S. Holden, Director of the Washburn Observatory, who has examined the photographs with considerable interest, is satisfied that they are genuine, and that the slight retouching to which they have been subjected has not materially detracted from their authentic character.—*From the Madison (Wis.) Journal, Nov. 19.*

OUR new (the latest) catalogue of photographic materials is just issued.

* Translated from *Deutsche Photographen Zeitung* by H. D.

Exposition Jottings.

[FROM OUR NEW ORLEANS CORRESPONDENT.]

IN choosing the above caption for a series of light, chatty notes about the great World's Fair, soon to open here in New Orleans, I do it with intention of not being limited to any one line of thought, either fact or fancy; and although I shall make photography and art the prominent topics, I intend to talk of everything which interests me, and which therefore I may be pardoned for presuming will interest your readers. The notes of preparation for the great Exposition are sounding on all sides, and over two thousand men are at work in the grounds and on the immense buildings, yet it is doubtful if they can be ready in time. It is already rumored that the opening will be postponed till Dec 15th, ostensibly to have President Arthur here, but really because they cannot be ready before that.

The conviction that a great many people are coming next winter has stirred the city to unwonted animation.

New Orleans is being cleaned and painted and refurbished and furnished as she has not been for many a year. Unused houses are opened up and refitted; unused rooms are cleaned, brightened up and furnished, and a general disposition shown, from the lowest to the highest, to be in good shape to receive their visitors and make them comfortable. And although of course there is behind it a legitimate desire for gain, there is also a large element of that well-known, warm-hearted Southern hospitality which will heartily welcome, and kindly entertain all comers, beyond what is entered in the bill.

New Orleans has grown from different causes, and is governed by different motives from almost any other city. It has scarcely any local support.

The surrounding country is sparsely inhabited, and there is no large town within a radius of nearly two hundred miles. New Orleans stands at the great natural gateway to the broad valley of the Mississippi, like a giant sentinel, to receive and

deliver its vast commerce. She produces nothing. She simply handles the productions of others. She is a city of merchants, and but for railroads would be a city of merchant princes. Everything in the queer and quaint old city is new and strange to me, as it will be to any who come, for I am but a few days here for the first time. But it does not take long to see that New Orleans is a city of curious paradoxes.

People who disembark here, instead of going up the river bank go down the levee into the city; there they find the sewers, open streams of water on each side of the streets, and running rapidly away from the river instead of to it. The wells are built up twenty, thirty, sometimes fifty feet in the air, instead of being dug down into the earth. They have no cellars and no graves. The dead are stored above ground, instead of being buried in it. The cemeteries are veritable "cities of the dead." Each tomb is a little house about 6 x 8 or 8 x 10 feet with gable and roof, moulded cornice and pillared wall, ranged in streets and squares like any town.

All Saints' Day has just passed, before which each year all these tombs are cleaned and painted like the houses of the living, and on that day the whole city goes *en masse* to carry flowers and beautiful ornaments, lighted lamps, and burning candles, to adorn the homes of the departed. It is a strange feeling to enter the cemetery, like the gates of a walled city, and pass with the crowd along those narrow streets compact with houses but little taller than our heads. We could imagine it a city in Lilliput invaded by giants. No wonder the little people keep closed doors and silent houses; we can fancy them trembling within, peeping out with scared eyes upon their huge invaders. But such fancies were only for us strangers. The people evidently held the day in deep reverence, and came with tributes of earnest affection for the inmates of those silent dwellings, and impressed us with profound respect for the custom and the people who keep it sacred. In short, the people of New Orleans are sincere, polite, generous and hospitable. Come and

see the great Exposition they are preparing for you, and give them a benefit. They deserve it.

Anthony's New Transparency Dry Plates.

IN response to the following invitation—

BOSTON, Oct. 24, 1884.

"With the object of demonstrating the method of obtaining the best lantern and window pictures from the Gelatino-chloride Transparency Plates, a meeting will be held at the Rooms of Mr. C. F. Conly, No. 465 Washington Street, on Tuesday the 28th inst. at 8 P. M.

"The development of dry plates generally will be a subject of discussion.

"Your presence and aid in making this gathering successful and instructive is respectfully requested by

DAVID COOPER."

A large number of the most prominent professionals and amateurs of Boston and vicinity, and several representatives of the press, were gathered at the time and place appointed. They were received by Mr. Conly, whose generous desire to aid in any effort to impart information on the subject of photography prompted him to offer the use of his reception room and excellently appointed operating department of his studio for the purpose.

Mr. Cooper opened the meeting by thanking those who attended for the encouragement afforded by their presence, which considering the state of the weather was a proof of the deep interest taken in anything relative to photographic progress.

Reference was then made to the nature of the proposed demonstration, attention being particularly directed to the Anthony Transparency Plate and its remarkable characteristics—notably, absolute transparency in the lights, exquisite tone and great softness and brilliancy.

On a rack in the show-case were arranged several negatives made on the Eastman special plates. These were handed around for inspection, and received a tribute of general admiration. Next came a number of exquisite transparencies made from the negatives shown on the Anthony Trans-

parency Plates. They attracted great attention, and many interesting questions were asked and answered on the subject of this beautiful branch of the art. The occasion was improved by Mr. Conly in paying a proper tribute of respect to the genius of the veteran photographer, Mr. T. C. Roche, so widely known, whose efforts in behalf of advancement have proved so successful and valuable. The audience were informed that the plates in question were manufactured under his special supervision. These remarks were followed by a murmur of assent, not loud but deep, which told as plainly as words could how much he was held in admiration by his brethren of the craft.

A discussion on the subject of dry plate development generally was declared in order, and immediately this ever-interesting topic brought forth much valuable information by the general interchange of experience.

A point of great value to instantaneous workers was demonstrated by Mr. Cooper through negatives shown, and was to this effect: Plates that have been exposed very rapidly may be made to produce an image (if the plate is thoroughly washed previous to development,) twice as well timed as would be the case were the developer poured on the unwashed plate. This was explained on the ground that the water removed the restraining influences of the bromine liberated by the light on exposure.

Several gentlemen present declared that they had noticed this peculiarity, but had regarded it as accidental, and never considered the reason why.

Those present were then invited to the dark-room to witness a demonstration on the transparency plate, and in sections took their stations to note the result. Several excellent examples were produced, after which all retired feeling thoroughly satisfied with the instructive and agreeable manner in which the evening had been passed.

After returning thanks to Mr. Conly and Mr. Wilsred French, of B. French & Co., for their kind assistance in rendering the gathering a success, the meeting closed at 10.45 P. M.

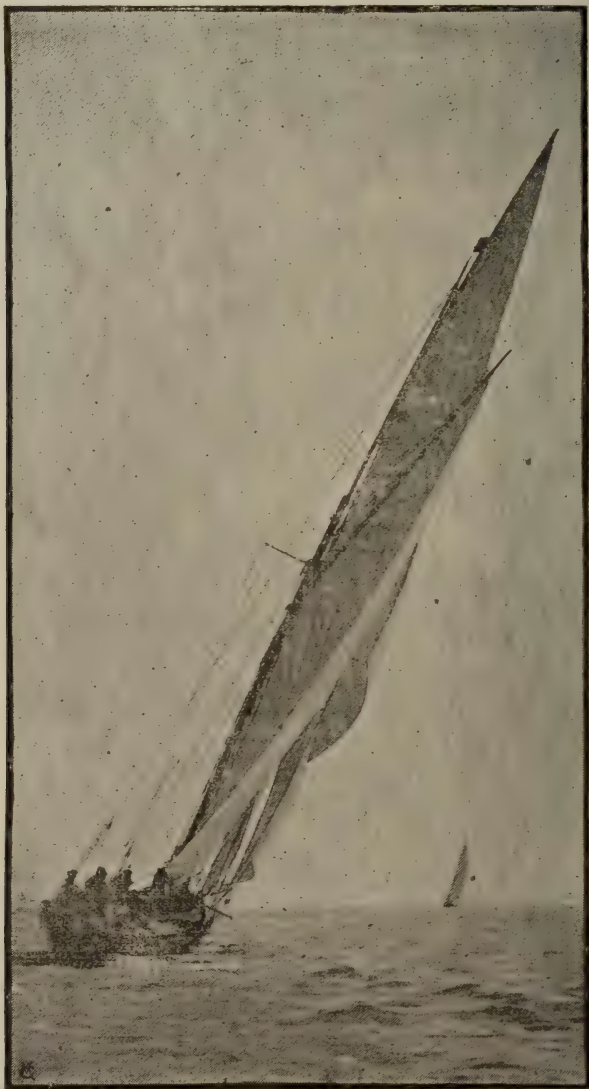
FOREIGN NOTES.

[FROM OUR LONDON CORRESPONDENT]

The Mercurial Intensifying Process.—

This method of working has long been re-

garded as unsatisfactory, but by using a solution of sulphite of soda instead of ammonia for darkening the image (after bleaching with mercuric chloride) a decided step in advance appears to have been made, and I



THE BUTTERCUP. (SEE NEXT PAGE.)

see by a recent issue of the *Photographic News* that the experience of Mr. F. C. Beach quite coincides with that of European investigators. Scolik of Vienna has worked with the intensifying method in question, but I find that instead of whitening the neg-

active in a simple solution of mercuric chloride he uses a solution also containing bromide of potassium, and, moreover, he finds it advantageous to use a very dilute preparation.*

The Photographic Exhibition.—On the whole the present exhibition is considered a good one, but there has been much unreasonable complaint against the judges, be-

cause, in consideration of the great artistic merit of certain pictures, they overlooked certain technical defects. In connection with this exhibition, a new feature has been introduced by the *Photographic News*—many of the pictures being reproduced as Meisenbach blocks and printed along with the letter-press. The Meisenbach blocks appear to very nearly resemble those made



by the method of Mr. Fred E. Ives, and although the Meisenbach Company do not state by what method they work, one is not likely to be far out in conjecturing that it is some modification or form of the general principle first enunciated by Mr. Ives. I am enabled to send you two of the blocks,

the first represents one of Messrs. G. West & Sons yacht pictures, and shows the yacht "Buttercup" scudding along at full speed under a brisk wind, and the second block which I send is one from a photograph by Mr. R. H. Lord, of Cambridge. It represents a scene from the "Birds" of Aristophanes, as recently performed at Cambridge. The picture represents the adventurer Peithetairos (Mr. M. R. James) en-

* This formula will be found in full elsewhere. See p. 544.—ED.

deavoring to persuade the Hoopoe (Mr. F. R. Pryor) to establish the aerial bird-city, which should in time govern both gods and men; but the Hoopoe looks very doubtful as to the success of the enterprise, although he ultimately yields to the persuasive talents of Peithetairos.

A Simple and Effectual Shutter.—At a recent meeting of the Photographic Society Mr. F. W. Hart called attention to a shutter which he had received from Belgium. It is made by Jonniaux of Liege, and consists of a flap, A, provided with a needle, B, placed as shown in the subjoined sectional diagram. Over the needle B is



the ring F, this ring being attached to a hinged piece C. The hinged piece C is lifted by the air ball D, which expands under the influence of air forced in through the tube E. If the flap is only lifted until it is in a horizontal position, the ring remains on the needle; but if lifted beyond this position the ring passes over the end of the needle and the flap closes immediately. If a spring is attached to the flap an exposure as short as one-twentieth of a second may be made.

The shutter in question was handed round and all present were pleased with the ease and quietness with which it worked, and there is no shock until the flap finally closes.

Toning.—Mr W. M. Ashman, who is well known as a photographer having had great experience both in America and in England, has given us the result of his experience in toning, and he points out that although it is very advisable to remove all traces of free silver by washing in ordinary cases, an especial exception is permitted when dealing with prints from weak or under-exposed negatives, it being found that such plates yield pictures of better tone when a little silver is left in the paper.

The Improved Oxy-hydrogen Microscope.

—Messrs Swift & Co., who are well known as makers of high class microscopes, have just introduced a form of oxy-hydrogen microscope which possesses notable advantages over the older instruments, and Mr. I. H. Jennings, the eminent photo-micrographer, strongly recommends this apparatus for photographic purposes when enlargements are required from microscopic objects. The following description and sketch are taken from the journal of the Microscopic Society:

This apparatus is suitable for use with ordinary objectives from 4 in. to $\frac{1}{4}$ in. The gas jet can be regulated for either parallel or convergent light without the necessity of opening the lantern, it being mounted on an independent pillar 2 in. from the back, and fitted to adjust to or from the condensing lenses as occasion may require. The perforated metal base renders it very light, and also allows the passage of a free current of air, so that the lantern is kept as cool as possible. There are three screws, upon which the whole is supported, to finally adjust the disc of light. The tube into which the convergent lenses, polariscope, and stop-lens fit is cut open for the purpose of easily dropping these pieces into position. This opening is covered with a revolving segment of tube, similar to the breech action of the Martini rifle.

The stage has rectangular motions by cams which are moved by the milled heads at the back of the stage, and the clip holding the object will equally clamp the thinnest slide or a thick zoophyte trough; the clip is lifted by turning the milled head. The coarse focussing is by rack and pinion, and the fine adjustment is similar in construction to that of the ordinary Hartnack microscope. The alum trough for stopping the heat rays can be used behind the condensers for convergent rays, or inserted in the opening in front when parallel light is required, the opening being covered by a revolving segment of tube when not used.

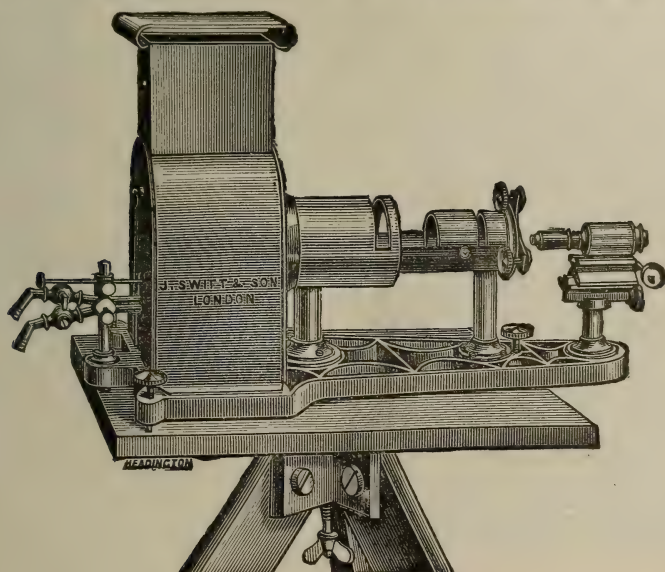
Magnesium at Ten Shillings a Pound.

—Whether the Magnesium Manufacturing Company which has recently been established at Charlottenburg near Berlin will actu-

ally fulfill their promise of turning out the metal magnesium at the above-mentioned low figure it is difficult to conjecture; but, if so, a new and valuable power will be placed in the hands of the photographer. "How long will an ounce of magnesium wire or ribbon burn?" a friend inquired of me the other day, but it was impossible to give him any very definite idea, though I should fancy it would last for at least ten minutes if burned in one of the usual clock-work lamps. Assuming this estimate to be

correct we shall be able to have nearly three hours' illumination at a cost of ten shillings, if the new Company can do what it says it will do.

Under these circumstances one would expect every portrait photographer to keep a magnesium lamp or two in readiness, not only for the purpose of work at night, but as a means of brightening up feeble daylight; but it must not be forgotten that if the magnesium is burned in a room some sort of a chimney must be used to carry



away the white smoke of magnesia which is formed.

For out-door operations one would expect the magnesium lamps to be extremely valuable when a bright light is required; as for example in clearing away the remains after a railway accident: especially as, unlike an electric lighting apparatus, the whole arrangement is so portable as to be readily carried in one hand. Still it would be very much more gratifying to learn that the Charlottenburg Company have actually put the magnesium into the market at ten shillings a pound than that they are going to do so, and at the present moment magnesium costs in London just what it has

during the past ten years, namely twelve shillings an ounce. It may be mentioned that the new Company is to prepare the metal by decomposing the fused chloride through the agency of an electric current.

The Hydroxylamine Developer.—Last month I referred to the suggestion of Messrs. Egli & Spiller to use hydroxylamine as a developing agent, and several persons who have tried the new developer speak well of it. Mr. Spiller himself now says that he finds it well adapted for developing *chloride* (gelatino) plates, and by making certain variations a considerable range of tone may be obtained.

Mr. Spiller says:

Since the last communication was published I have been trying the development of gelatino-chloride with this developer, and have obtained results even more pleasing. I find by varying the alkali used, different tones are produced. Thus with potassium or sodium carbonate, a *sepia brown* is produced; with caustic soda or potash a *brownish-black*; with ammonia, a brilliant *purple*; and with alkaline carbonate, containing a trace of ammonia, a *chocolate*. A very curious result was observed when using the ammonia developer—viz., by increasing the exposure six-fold, and using only one-sixth the normal proportion of alkali, a bright orange deposit was formed.

It is expected that Mr. Spiller will shortly read a paper before the Photographic Society of Great Britain, in which he will give further details.

Fixing Prints and Plates without Hypo-sulphite.—Dr. Paul E. Liesegang has made some experiments which possess much interest, and he has pointed out a means by which—in the case of gelatino-chloride plates at least—it is possible to do without hyposulphite for fixing. The method is founded on the previously known fact that silver chloride is soluble in solutions of alkaline chlorides such as those of sodium, potassium or ammonium.

Dr. Liesegang, after some preliminary remarks, says:

Saturated solution of common salt is a little slow in its action; I therefore tried a saturated solution of chloride of ammonium, in which I left some collodio-chloride prints for an hour. It may be that a shorter time is sufficient, or that even longer soaking is necessary, but my observations lead me to think that one hour is a safe time. The prints, not toned, come out of the bath with the same brownish yellow color which the hyposulphite bath imparts to them. I washed the prints under the tap for a minute or so, dried them and exposed them, one-half covered with black paper, to the light. They had a few hours of sunshine and two days of diffused light, and till now not a trace of difference in the protected and exposed parts is to be remarked.

Of course an exposure for this time is not by any means sufficient to prove that the fixing is perfect, so I shall leave the prints in the window, and report on their behavior.

I next toned a batch of prints in the same way as I usually tone them, in an old gold bath with tungstate of soda, and kept them there for an hour in the chloride of ammonium. After drying they had an unpleasant slatey blue color, showing that too much gold had been deposited on them. I therefore prepared another batch of prints, which, instead of ten minutes, I left only one minute in the old gold bath. In the chloride bath they took a vigorous purplish brown color, but were somewhat over-printed, although I had taken care to print less than for hypo. fixing.

Now if this way of fixing prints proves to be safe (only time can teach us), we shall realise the advantage of doing away with hyposulphite; we shall use less gold for toning, and also shorten the time of exposing in the printing-frame.

Comparing the prints with others fixed with hyposulphite, I find that the finest half-tones in the lights, as well as in the shadows, are better preserved, and that from under-exposed negatives better results are to be obtained.

If the chloride of ammonium does not sufficiently fix the prints, I am sure we shall succeed by adding to it some ammonia. The fixing might then be done in upright vessels, the prints being hung vertically.

Since writing the above I have tried to fix gelatino-bromide plates and albumen prints with a saturated solution of chloride of ammonium, and I have experimented with plates from German and from English makers. The result is, that I find a period of two to two and a half hours to be sufficient to completely clear the film. By adding liquid ammonia to the bath, the time may be reduced to half an hour or one hour, according to the thickness of the film.

The salt bath dissolves the chloride out of albumen silver prints, but not the albuminate of silver, so that the albumen print darkens on exposure.

Iodo-chloride Emulsion—The *Photographic News* contains a translation of an interesting article by Herr. V. Schumann on the above subject. It is known that gelatine films containing only chloride of silver cannot be advantageously used for camera exposure unless in exceptional cases, but Schumann finds that if iodide of silver be present a film is obtained having most of the qualities of an ordinary gelatino-bromide film. A pure chloride film reduces too easily under the action of the developer, while one containing iodide only is only reduced with extreme slowness. A good iodo-chloride emulsion can be prepared either by dissolving the chloride and iodide salts in the gelatine solution, and then adding by degrees the silver nitrate, or by making two separate emulsions of chloride and iodide of silver, and then mixing the two after the washing process. It should be noted that the properties of a compound or a mixture of the two haloids are very different. A negative of the spectrum impressed on an iodo chloride film, prepared by mixing the two emulsions, shows two colored deposits. The red end of the spectrum as far as the G line is reproduced in the negative as a red tone, while that part of the spectrum from G extending to the violet appears as a greyish violet deposit. When using Stolz's potash developer, the difference of the two tones on the negative appears even more marked.

Experiments were instituted to determine the most suitable proportion of the silver haloids to be suspended in the emulsion. For this purpose three emulsions were prepared according to the following formulæ.

No. 1.—Iodo Chloride Emulsion.

A.—Ammonium chloride, .64 gram
Potassium iodide, '05 "
Gelatine, 1'5 "
Water, 15 c. c.

B.—Silver nitrate, 1'55 gram
Water, 15 c. c.

No. 2.—Same as No. 1, but with '15 potassium iodide instead of '05; and 1'65 silver nitrate instead of 1'55.

No. 3.—Same as No. 1, but with '64 po-

tassium iodide instead of '05; and 2'14 silver nitrate instead of 1'55.

To prepare the emulsion, A and B were heated in a water bath, and then mixed slowly, with thorough shaking. The mixture, after an hour's cooking, was allowed to stand over night; the emulsion was next washed for seventy-two hours, and after slightly diluting, at once poured over the plates. The emulsions prepared according to formulæ 1 and 2 transmit blue light, which, however, is much brighter than that exhibited by gelatino-bromide emulsion. No. 3 emulsion transmits an orange light.

Previous to cooking the emulsion a small quantity from each sample was spread on a glass plate, and with the films prepared from the fully digested emulsion, were placed in the sunlight. The unripe emulsion darkened much more quickly than that which had been digested. The colors of the exposed films prepared according to Nos. 1 and 2 were chocolate, and there was very little difference between the tones of the ripe and unripe emulsion. With the plates made by No. 3 formula there was, however, a great difference of color noticeable; thus, while the unripe emulsion yielded a deposit not unlike that of Nos. 1 and 2, the films prepared from the ripe emulsion assumed a greyish-green color, which did not alter even after some weeks' of exposure to daylight.

Further Researches of Herr Schumann.

—A gelatine emulsion exposed in the moist state to the sun's rays for some days became quite insoluble on the outer surface, and it suggested that this action may be due to the liberation of bromine and to the tanning action of this halogen on the gelatine. Your readers will doubtless remember that Warnerke found that the exposed parts of a film become insoluble when treated with a pyrogallic developer, and on this fact he founded a method of printing having some analogy with the ordinary carbon process.*

Fumes which Exert an Injurious Action

* The article by Mr. Schumann, translated for the BULLETIN, will be found on another page.—ED.

on Plates.—Many complaints have been made on account of mischief arising from the injurious action of the leather used for making the hinge of the dark slide shutter, some preparation being doubtless used in dressing the leather which exercises a fogging action on the films, and in consequence of this some makers are now using vellum for making the hinges, and with a satisfactory result. It is very desirable that we should really have some definite knowledge as to what substances will injure films when allowed to remain near them—or in contact—for a long time, and it is satisfactory to learn that Mr. F. C. Beach of your city proposes to make an exhaustive series of experiments in this direction.

The Heathen Chinee.—The Chinaman evidently knows how to take advantage of the improvements in modern science, if there is truth in what the French say. The treaty of Tientsin was photographed by the Chinese in order to show that the alterations made therein were legitimate, and that they had been initiated by Captain Fournier, but the camera did its work too accurately, and clearly demonstrated merely great skill of the Celestials in the somewhat difficult art of forgery.

What is an Amateur?—Rather a difficult question to answer; and one that is brought up in a conversational manner at the meetings of the Photographic Societies. It is, however, pretty generally agreed that any person who sells his pictures cannot justly claim to be regarded as an amateur, neither can one who gives lessons for money. Amateurs in America are now doing good work. I cannot help thinking that the following—extracted from the *Photographic News* is a gross libel upon them; at any rate if it is meant seriously.

Such as may wish to figure as photographers, and yet do no photographic work, have now great facilities offered them in the United States, as plates which have been exposed at the Niagara Fall, the Yellowstone Park, and other great tourist resorts, can now be purchased to hand. He who is anxious to wear the photographic laurels in the circle of his immediate friends

has now only to buy the exposed plates, take them to one of those persons who make a business of developing, and finally order the required number of prints. Even the possession of a camera is not essential; but it looks very much better to have one.

Those who are behind the scenes, however, tell us how the "ready-exposed plates" are manufactured. A number of plates alternated with sheets of black paper, are placed on a table in the dark-room, and a transparency—say, of the Horse-shoe Fall—is laid on the top. A wax match is now struck, and allowed to burn itself out while held at a distance of about a foot from the top of the pile. The exposed plate and the underlying sheet of black paper are now removed, and the next plate is exposed.

A Clearing Solution.—I have tried the following clearing solution and find it excellent, but curiously enough it becomes more active in its properties when kept for some time; this increase in energy being due to the absorption of oxygen from the air and the more or less complete conversion of the proto salt of iron into a per-salt.

A correspondent writes: Have you tried the following clearing solution? It is very efficient, but do not use it over and over again, as if so it will clear so well that the image disappears altogether in ten minutes or so:

Alum,	1 ounce.
Citric acid,	1 "
Sulphate of iron,	3 ounces.
Water,	20 "

When freshly made, this clearing solution has but little action on the image, but as oxygen is absorbed from the air, and the proto-salt is converted into a per-salt, the solution becomes capable of dissolving the reduced silver with tolerable rapidity. If used when old, its action must be carefully watched.

The Scott Vignetter.

NOTWITHSTANDING so many different kinds, the majority prefer the Scott, as well as Her Majesty.

Report of the Photographic Section of the Amer. Institute.

NEW YORK, November 4, 1884.

PRES. NEWTON in the chair.

The usual vote of thanks was given for late numbers of the photographic journals.

The Chairman of the Executive Committee said he hoped to be able to lay before the Section at its next meeting a paper by Mr. J. Traill Taylor on the subject of photographic literature.

Mr. GARDNER offered the following :

Resolutions of the Photographic Section of the American Institute concerning the death of Henry T. Anthony, adopted November 4th, 1884.

Whereas, The sad announcement has been made to us of the sudden death of Mr. Henry T. Anthony, for many years an active member of this Section of the American Institute, and one of its chief supporters ;

Resolved, that we recognize in this event the loss, not only to this Society, but to all photographic societies both in this country and the old world, one of its most devoted friends and efficient workers ; one whose death the entire photographic profession may well mourn as that of a friend. That his able and long continued services in commerce, in journalism, and in science and art, and in all that could add to the strength and glory of man, call upon every photographer to join with this Society in blessings upon his name.

Resolved, that this sad intelligence has fallen upon the members of this Society with the weight and sorrow of a personal affliction, for he was one of us, and many of us had learned to look to him as a father, defender and friend. We cannot forget that his hand sustained us in our infancy, and we cherish among our richest treasures the memory of his life.

We rejoice that it was our lot to labor with him. We rejoice that we knew him as the tireless merchant, the laborious editor, the liberal-hearted thinker, and the true friend of every aspirant to photographic fame.

Resolved, that these resolutions be entered upon our minutes, and a copy of the same be presented to the firm of which our beloved friend and brother was an active and honorable member.

The resolutions were seconded by Messrs. Duchochois and Grenier.

Chairman NEWTON then said ;

GENTLEMEN : Before action is taken upon

the timely and appropriate resolutions of your Committee, I desire to avail myself of this opportunity of paying my tribute of respect and esteem to the memory of our departed friend. My acquaintance with Mr. Anthony has been of many years' standing, and of a most friendly and intimate character from the first. Always courteous and gentlemanly, but never distant and reserved, one could always feel the sincerity of his kindly greetings and the close sympathy of his heart and hand. In ancient times the highest compliment which could be paid to a man was to say, "He was free from guile." We can truly say of our friend, "In him there was no guile." He had no deceptive methods or ways, and always said what he meant and meant what he said. His education, intellect and genius eminently qualified him for a pioneer in introducing, developing and perfecting the new and wonderful art-science of this century.

The resolutions were then unanimously adopted.

Mr. J. B. GARDNER. Mr. President and Gentlemen : While it is just and proper that this Society should duly notice the death of Mr. H. T. Anthony by passing the usual formal resolutions *apropos* to such occasions, it is not all we should do when we remember the substantial aid he has always rendered to this Society, and when we see, too, a number now present who were long and intimately acquainted with him, and who would no doubt be pleased to say a word concerning such portion of his life and work as comes within the range of their own personal knowledge. I therefore move that such opportunity be given before entering upon the regular programme of the evening.

Mr. Gardner's motion was adopted.

Mr. H. N. GRENIER. I have known Mr. Anthony as a friend since the year 1863. In my last struggle in experimenting he was always ready to help me, not only with advice, but in any other way in his power. I merely mention this to show how unselfish this true and good man was for the advancement of photography in general. His labors were not simply for the benefit of his house. He had nobler aims. All who knew him can but sorrow now that he is gone. He was one of the grandest workers for the advancement of the art of photography, and his success and achievements in that direction cannot be estimated.

Mr. O. G. MASON. It was my good fortune to make the acquaintance of Mr. Anthony

more than a quarter of a century ago, and the friendship and intimacy then formed has been kept up until within a short time since. I have always been asked to step into his office when in his store for the purpose of having a chat as in a home parlor. I was privileged to go about the establishment, and he has often invited me to go upstairs to see what was to be seen. I have always found Mr. Anthony ready and gladly willing to impart any information he was able to give. In all other respects I have found him to be a free and genial man whom any one would like to know. It will be remembered that some ten years ago he presented this Section a very nice photographic album. In his presentation remarks he said that he thought the members of the Society should have their photographs made and put into it and kept for future reference. The album contains but few pictures, and I think it a proper time to call the attention of the members to the fact. We should each consider it a duty to place our pictures therein. It would be a gratification to those who come after us to be able to see the pictures of those who had taken an active part in the formation of the earlier history of the Society.

Chairman NEWTON suggested that the Executive Committee produce the album at every meeting, for the purpose of obtaining the desired photographs.

Mr. P. C. DUCHOCHOIS said he became acquainted with Mr. Anthony in the year 1853. His memories of him were of the most pleasant character. Since the first day he knew Mr. Anthony, he was always sure of a cordial welcome after a knock upon his door. He held him in the highest esteem, and confirmed the many encomiums that others had given.

Mr. HOLMES. I have been acquainted with Mr. Anthony for 36 years, having had business with him and the firm of which he was a member since 1848 up to almost the time of his death. At all times I have found him a very pleasant, genial man, liberal-minded, always ready to communicate anything he could that would be a benefit to his fellow artists, with whom he co-operated freely and generously, and I sincerely regret his departure.

Mr. J. B. GARDNER. Mr. President and Gentlemen: Since our last meeting one of the early explorers in the photographic art has been taken from our midst, and we shall nevermore behold in the flesh our beloved brother, Henry T. Anthony. But though he has passed beyond the reach of our natural vision, in our

mind's eye he is yet present with us; and though dead to all of the earth, he will continue to live in our affections. It has been the happy privilege of some of us in this Section to know him personally for more than a quarter of a century. We have witnessed his ardent love for everything photographic, and his unremitting labors to advance the art. It is no doubt safe to say that no man, living or dead, has expended more money, more mental force and more exhaustive labor in building up the profession. And the work he has thus accomplished will no doubt prove a more lasting monument of his memory than the marble that marks the years of his life. That he possessed the culture and refinement of a gentleman, all who knew him will bear witness. That he labored to be just as well as generous with his patrons, is past the shadow of all doubt. Though he made no pretensions to a religious life, yet he had strong moral convictions, and from these he constructed a theology which he constantly endeavored to confirm by reducing to practice the principles it embraced.

For many years he was a regular attendant of this Section, and no one labored harder than he to keep up the interest of the meetings and make them useful to the fraternity. Thus taking an active part in this Society, and being a member of one of the largest photographic stock houses in this country, he became very favorably known both in the new and in the old world, and hence was continually applied to for all kinds of information respecting photographic processes and photographic apparatus. This led to a very extensive correspondence and an unlimited amount of writing and study. But besides these, there were a thousand and one calls upon his time and attention that naturally grew out of the rapidly increasing prosperity of the firm of which he was always an active member. No new process or invention pertaining to photography escaped his notice, and any of these he deemed useful to the craft was, with the least delay possible, placed within their reach. He was also an expert critic of photographic work, and in this way used his best endeavors to strengthen and dignify the profession. In this respect, many practical photographers can never forget his courtesy and kindness and willing assistance in every time of need. That Mr. Anthony maintained the respect and esteem of his employees is evident from their long and faithful

labors in his service, and from their own testimony respecting the many commendable traits in his character. He not only won the friendship of those in his employ, but the hearty good will of his patrons and those with whom he associated in scientific and social circles. All these will miss him from their midst, and yet in spirit he will be with them still; for as a great theologian has said, "Thought brings presence, and affection conjunction." Of those we think and love, time and space have no power to separate; and thus the past is linked to the present, and the present to the future; the physical to the mental, and the mental to the spiritual. If we could only look from the spiritual side of life rather than the physical, we should no doubt rejoice rather than weep for our brother, who has thrown off the burdens of this life and exchanged "the ills that flesh is heir to" for "an inheritance incorruptible, undefiled, and that fadeth not away."

The Chairman of the Executive Committee stated that he had received notes from Messrs. Horgan and McGeorge who were unable to be present at this meeting. The following paper from the former gentleman was, however, read:

The Value of a Photographic Library of References.

MR. PRESIDENT AND GENTLEMEN:

I thank you most heartily for the effort you are now making to collect a practical working library of photographic literature. When I began studying and experimenting on the various methods of applying photography to aid the printing press, I realized the necessity of some standard works of reference. These I could not well afford and continue to buy the current literature of photography, so I went to the rooms of your Photo. Section with a list of the knotty points I wanted to study, and was amazed at the few meritorious works your library contained, and I was therefore compelled to gather together a polyglot collection myself, with this disadvantage that many works I imported on account of their high sounding titles I would not think of wasting my money on had I first the privilege of seeing them. I mention this to call your attention to the fact that if you had a well regulated library, publishers would have supplied you with advance copies to advertise their works, as your Society

by acknowledging the receipt of them would bring such works to the notice of the fraternity in the best possible way, and students of our art would have an opportunity, by consulting your library, of determining which works they would buy as containing the information in the branch of art they were studying. Well, you have at last begun the agitation of this question, and I trust it will not end without something practical being done by the American Institute.

To include a copy of every work ever published in the French, German and English languages would be comparatively a small library, but it would be a credit to our city and country and to the American Institute.

As some of the members of your Section have excellent private libraries, I will not attempt to make any suggestions in regard to what in my experience I have found meritorious in the literature of photography; but I do hope you will endeavor to secure all that has been written by the "fathers" of photography; for example, such men as Niepce, Daguerre, Fox Talbot, Sir Robert Hunt, Sir John F. W. Herschel, D. Van Monckhoven, M. Poitevin and Prof. John W. Draper. The work they did, and the correctness of many of their theories will amaze many present experimenters and bring well merited honor to the pioneers and early practitioners of our art, "for truly were there giants in those days."

The Philosophical Transactions of the Royal Society between 1840 and 1850 are especially valuable, as well as the Scientific Memoirs of Prof. John W. Draper. I lay particular stress on these, because the experimentalist of the present hour, to reach the springs from which all photographic knowledge came, will find in them a fountain of ideas which will teach him that, after all, our present facilities for knowledge and experiment are not so very new under the photographic sun.

S. H. HORGAN.

The following paper was also read:

The Action of Light on Silver Compounds.

BY P. C. DUCHOCHOIS.

In the communication of a theory of the action of light on silver salts I made at the June meeting of the Section, I certainly made no pretense of having solved a problem which has always embarrassed photographers since the

early days of the discovery of Niepce and Daguerre. I know that the development of the latent image by reactions independent of a previous reduction would not be accepted without contest, and would, perhaps, revive a discussion always interesting to those who have studied the changes light effects on certain compounds. I did not, however, expect to find among the opponents photographers who sustained—and not without good arguments—the physical theory to explain the formation of the image by a deposit of the silver reduced by an acid developer, for the dynamic theory, if it can be so called, explains in a similar manner the alkaline development: If the molecular change—or motion—imparts to the silver salt the property of attracting particles of metal, it may also cause the reduction of the isolated salt by reagents possessing a great affinity for the haloid which tends to separate from its combination with silver, as shown by the behavior of an iodide of silver film which can be developed by an acid or an alkaline developer, the image acquiring, however, in the latter case little or no intensity.

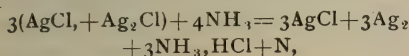
It has been objected that in the impossibility of drawing a limit where the reduction becomes visible, it can be assumed that the invisible image is identical with the visible one. But the atomic motion necessarily preceding the chemical change, which is only a consequence, one may as rightly say that the action of the reagent is altogether independent of any reduction, and results from the separation of the elements forming the bi-atomic molecules which become momentarily mono-atomic and therefore in a state favorable to form new combinations; moreover that impressions can be obtained without the direct intervention of light in circumstances which hardly admit that a reduction could be effected. I allude to the images of Moser and to the experiments of Hunt, Draper and Niepce de St. Victor. Among the many experiments of Moser I will cite the following, which is certainly very interesting: A silver plate was iodized after the manner of Daguerre and, at night, a medal cut in agate, an engraved silver plate, a horn ring and several other objects were placed upon it. The plate was afterwards exposed to the vapors of mercury and the image of each of these objects was perfectly reproduced. But the most extraordinary result obtained by Moser to show that this phenomenon was not due to an action of contact is that these images were also produced in the most complete obscurity by bodies placed

at a small distance from the iodized plate. From his researches Moser concluded that "All bodies radiate light in the dark," and that "There is latent light as well as latent heat." R. Hunt was led to attribute this phenomenon to a different cause. His hypothesis, which he sustained by many ingenious experiments, was that they were due to an exchange of heat between the bodies placed in presence. At the time the experiments of Moser and Hunt were made (1841-1842), the correlation of the forces was not scientifically established, hence, probably, the divergent theories. To-day they could easily be conciliated, since heat and light are the same mode of motion.

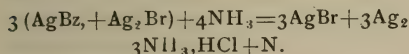
It is hardly possible to imagine that in these experiments the latent image is formed by a chemical change, and if a deduction based on analogy has any value, one can admit that there is no reduction also when the light acts on the silver salts for the fraction of a second; moreover that no means can detect any trace of elimination of the haloid, although the ten-millionth of one grain of bromine to the square inch eliminated from a 40 x 36 inch plate exposed under a thin layer of water would suffice to form a precipitate. The fact that an exposed plate can receive another impression when kept in darkness for a certain period, tends also to prove that no reduction has been effected, for, as the haloid has been evolved, how could this remarkable phenomenon be explained? Let us, however, suppose *a priori* that the silver salt is reduced either to a sub-salt or to metal. If the latent image be formed of metallic silver the development (alkaline) is inexplicable otherwise than by the theory now under discussion. This needs no comment: the silver being already reduced, the reaction can only be that of a substitution of base. As to the reduction in a sub-salt, it has been shown in the former paper that the insolated silver chloride was a mixture of silver and of unaltered salt. The arguments and the deductions from the analyses were objected to because, first: The sub-salt does not directly result from the dissociation of the haloid, but from the combination of the metallic silver in a nascent state of reduction with the silver chloride not acted on by light (?); second: The insolated substance is insoluble in nitric acid and can even be formed under that acid; third: The insolated substance is a compound of a sub-silver salt first formed, of metallic silver resulting from the reduction of the sub-salt, and lastly of unaltered chloride.

The insolubility of the reduced salt—or a part of it—in nitric acid is certainly a very remarkable fact, but not conclusive. The anomaly may arise from an allotropic modification or from a peculiar arrangement of the metallic particles with the unaltered silver salt. There is even some cases of isomerism which are more curious, such is that of the ferric hydrate which becomes insoluble in acids when kept under water for some time.

The last objection has a certain value and deserves to be taken in consideration, as the previous analysis may leave a doubt on the real composition of the insolated substance. A series of experiments were accordingly made, and, instead of investigating whether the haloid disenaged during the insolation was an equivalent of that necessary to combine with the precipitated silver, the solvents were also tested for chlorine or bromine, for, *if one of the components of the insolated salt be a sub-salt, the liquid ammonia employed to dissolve the unaltered salt and precipitate the silver from the sub-salt must contain the haloid:*



or,



The analysis showed no trace of either chlorine or bromine in the solvents after the unaltered salt had been precipitated by neutralizing the ammonia with nitric acid. Two grains of silver nitrate were used in each experiment and the after addition of half a grain of sodium chloride or bromide at once formed a precipitate with the silver nitrate added. In acid the silver bromide after one-hundred hours' insolation was hardly discolored, only 0.55 grains of bromine having been eliminated, while under water the elimination was 2.17 grains. The silver chloride in the same circumstances gave 2.65 grains chlorine in acid and 3.96 grains in water. In these experiments 68 grains of silver nitrate were precipitated by a slight excess of sodium chloride or bromide, and the silver salts washed by decantation before being insolated. The compounds insolated in water were partly insoluble in nitric acid, and the amount of silver found in the solutions, together with that precipitated by ammonia, was as near an equivalent of the haloid eliminated by the luminous action as can be expected in such analysis. The results were as follows:

1. *From the silver bromide insolated in nitric acid.*

Silver bromide from the haloid in the acid,	1.29 gr.
Silver bromide from the silver precipitated by ammonia,	1.45 gr.

2. *From the silver bromide insolated in water.*

Silver bromide from the haloid in the water,	5.10 gr.
Silver bromide from the silver dissolved by nitric acid,	1.30 gr.
Silver bromide from the silver precipitated by ammonia,	4.625 gr.

3. *From the silver chloride insolated in nitric acid.*

Silver chloride from the haloid in the acid,	10.70 gr.
Silver chloride from the silver precipitated by ammonia,	11.30 gr.

4. *From the silver chloride insolated in water.*

Silver chloride from the haloid in the water,	16.00 gr.
Silver chloride from the silver dissolved by nitric acid,	2.05 gr.
Silver chloride from the silver precipitated by ammonia,	15.10 gr.

It is manifest, therefore, that the theory based on the formation of a sub-silver salt cannot stand the test of experiment, which proves without contest that the reduction is entire; that consequently the visible image is formed of metallic silver before fixing, and that although it may be supposed, as the contrary cannot be demonstrated scientifically, that the invisible image consists of particles of reduced silver, the alkaline development is nevertheless independent of that reduction and results, as before explained, from an atomic motion which in attenuating the affinity of the haloid for the silver, causes the former to combine with the reagents and thus to deposit the metal which ultimately forms the photographic image.

Secretary MASON thought the paper of Mr. Duchochois was a good addenda to the one read in June, and that the theory was explained clearly.

Mr. GRENIER hoped that the papers would be continued, and at the end put into book form and placed in the library.

Secretary MASON said that while recently visiting the American Institute Fair he noticed in one particular section of the exhibition a dense crowd gathered around an article known as the air-brush, of which he had read in advertisements but concerning which he had

formed the opinion that it was a mechanical contrivance having, perhaps, very little merit, and would not be patronized by first-class artists. He was, however, agreeably surprised to see the work that could be done with it, and was so favorably impressed that he invited the exhibitor to appear before the Section.

Mr. C. H. Tebo, the agent of the air-brush, assisted by a lad, thereupon gave some very satisfactory demonstrations of the practical workings of the instrument.

The instrument was very simple, and its application and uses fully described, as heretofore published in these pages.

Various opinions relative to the merits of the brush were expressed, the majority of which were very favorable.

Chairman NEWTON said he had made a combination of ammonia with different carbonates in a way that it could be used without the possibility of producing a green fog. The principle was simply the decomposition of the salts of ammonia in contact with the carbonates. As the hour was late he deferred speaking at length concerning the combination until the next meeting.

On motion adjourned.

Association of Operative Photographers of New York.

NEW YORK, November 5, 1884.

PRESIDENT BUEHLER in the chair.

The minutes of the previous meeting were read and approved.

Correspondence read and placed on file.

Mr. BUEHLER. Mr. Duchochois, who is one of the oldest photographers in the city and also well known for his literary efforts, has kindly consented to give a number of lectures on Chemistry in Relation to Photography.

Mr. DUCHOCHOIS. The first lecture is nearly ready and I will deliver it at the next meeting. I will try to make them all as interesting as possible, that those who have not studied chemistry may be induced to do so. Chemistry is part of the knowledge that all photographers must possess.

Mr. BUEHLER. We are much obliged to Mr. Duchochois. The benefits derived from a proper understanding of photographic manipulations are certainly worth all the thanks we can give you. It is not merely to work certain formulas but to know the reason why, and to help us to work understandingly. I think it is well to call your attention, Mr. Duchochois, to

the treatment of the silver bath. The keeping a silver bath in good working order is not well understood by all. If you can give us a good method of doing it you will do us a great favor.

Mr. DUCHOCHOIS. That will come in the lectures. I intend to explain, as far as my knowledge goes, the various reactions which take place in the compounds we use in photography. Incidentally I will say that the causes of the defects in the wet collodion process come from the silver bath in most cases, the developer and collodion being rarely at fault with good formulas.

Mr. BUEHLER. It would be a great benefit if you were to give us your experience in treating a bath properly. I went through all the methods prescribed in the different treatises on photography, and I found there were so many diversified opinions on the subject that a beginner is at a loss to know what to do properly. Some people smile at the idea of fusing a silver bath. Monckhoven recommends it. As soon as the silver is fused I think it is time to stop; if carried on further, decomposition will take place. I think the occasional fusing of the silver bath, if done properly, is to the point.

Mr. SCHAIDNER. I would like to ask Mr. Duchochois as to the amount of acid necessary in a bath to give good results. Is it better neutral or with plenty of acid?

Mr. DUCHOCHOIS. I have never been able to make good pictures with a bath quite neutral; with an alkaline bath it is out of question. The amount of acid to be used depends on the state of the collodion and that of the silver solutions. The iodide and bromide of cadmium are seldom pure compounds, and the collodion, if made with these salts, should have undergone a partial decomposition, shown by the liberation of the iodine, to work without fogging. Supposing your collodion, no matter how it is made, is old enough to show decomposition by being discolored, the amount of acid in the bath may be very small to avoid fogging. But if the chemicals have a tendency to work white and black you require a good deal more acid. There is no hard and fast rule by which a photographer can go. By use the bath becomes contaminated with organic silver compounds more reducible than the nitrate, which induces a dense reduction in the whites and consequently a want of details both in the lights and shadows. The remedy is then to evaporate the bath to dryness and fuse

the residue. But before so doing the solution should be slightly acidified with nitric acid and the fusion carried on for a few minutes only, say five minutes and even less, in order not to decompose the silver nitrate.

Mr. SCHAIDNER. Is not permanganate a substitute for fusing?

Mr. DUCHOCHOIS. I do not think that the bath created with permanganate will work as well as after fusing, for the permanganate only acts on the organic matter, not on the compounds formed on the reaction of ether and alcohol.

Mr. BUEHLER. Permanganate is merely a purifier in relation to organic matter. You can even overdo the treatment with permanganate of potash. The collodion may be just as much at fault by being composed of impure chemicals. If iodide of ammonium is used in the collodion you are apt to get an unstable salt in the bath that may form many combinations that are harmful in several respects.

Mr. DUCHOCHOIS. Lithium or sodium have the properties of ammonium without its drawbacks. Ammonium iodide is apt to be decomposed sooner in collodions than any of the other iodides.

Mr. SCHAIDNER. I have read that if fog on a plate can be rubbed off without disturbing the film, it indicates too much acid in the bath, and I have also read the contrary.

Mr. DUCHOCHOIS. I think that when the fog is superficial and can be rubbed off, the fault in most cases can be traced to an organic silver bath or to prolonged development, especially if the bath is much acidified. It has been said that the imperfection was due to a new colorless collodion, or nearly so, but I have been unable to ascertain in a positive manner if in all cases that was really the cause, having often found that the fog was then in the film.

Mr. BUEHLER. I have worked the silver bath slightly acid in order to get a clear negative, and to convince a skeptic increased the amount of acid and obtained fog. If a good deal of organic matter is in the bath, it is very apt to produce fog by excess of acid. Why, I do not know.

Mr. McGEORGE. I remember some years ago Mr. Black of Boston said he used an enormous amount of acid in his bath.

Mr. DUCHOCHOIS. Mr. Black gave a description of that process at the Convention in Chicago. When I read it, I could not account for it. I know Mr. Black by reputation and by sight, and he is a man who would not say any-

thing untrue. I wanted to satisfy myself and made a small bath, and found that an excess of acid need not necessarily produce fog if the bath was in very good order. I tried it, but obtained an ambrotype or thin negative every time. Mr. Black may have prepared his collodion with gun cotton containing a compound similar to nitro-glucose, and in that case he may have obtained good negatives with comparatively long exposure.

Mr. SCHAIDNER. When there is an excess of acid in the bath, the negative gets thinner and thinner.

Mr. DUCHOCHOIS. If there is a great excess of acid, you obtain a good positive in consequence of the slightly impressed film and rapid development, but seldom a good negative. I feel certain that the amount of acid in the developer has something to do with it too. In this demonstration of Mr. Black's I am not able to say what the amounts of iron and acid were at the time. Not having sufficient acid in the bath may fog the plates. Harmony is needed between the collodion, silver bath and developer.

Mr. SCHAIDNER. If there was a rule we could go by, if we knew that we dare not add more acid than will make litmus paper distinctly red, we know that the fault must lie with something else, and that is as far as we dare go.

Mr. DUCHOCHOIS. My bath is thirty-three pints of water. I add no more than fifteen minims of C. P. nitric acid (the ordinary acid is very impure). That amount of acid does not show by the litmus paper until after a few seconds have elapsed. When the bath has been used some time I am obliged to add more acid to obtain more delicacy in the shadows. The less acid in the bath, the more contrast and want of detail there will be. Clear shadows with high lights and no definition are sure indications of want of acid in old baths.

Mr. SCHAIDNER. Is it better to acidify the collodion or the bath, if the negative is harsh?

Mr. DUCHOCHOIS. If the bath is new, I would prefer to acidify the collodion with iodine or bromhydric acid. Mr. Henry T. Anthony, in speaking of that, told me he employed acetic acid. I tried it and found it was an improvement. Mr. Anthony made many improvements in photography and was always ready to impart them to the public. The loss of Mr. Anthony will be a great one, not only to his friends and acquaintances but to photographers in general.

Adjourned.

NEW YORK, Oct. 15, 1884.

E. ANTHONY, ESQ.

Dear Sir: At the last regular meeting notice of Mr. H. T. Anthony's death was brought before the Association, the members of which desire to express their esteem for your late brother.

Yours Respectfully,

THOS. POWER, *Secretary.*

The following resolutions were unanimously adopted :

Whereas, Mr. Henry T. Anthony, scientist, engineer, photographer, etc., has terminated a long and brilliant career ; and

Whereas, Mr. Anthony has done much for the progress and advancement of our art ; therefore be it

Resolved, That we express our appreciation rendered by the deceased ; and

Resolved, That we hereby express our profound sympathy.

Com. } CHAS. SCHAIJNER.
VICTOR ACKER.
THOS. POWER.

Society of Amateur Photographers of New York.

A REGULAR meeting of the Society was held at their rooms, No. 1262 Broadway, Nov. 11, Mr. F. C. BEACH in the chair.

The SECRETARY read some communications, among them being a letter from Mr. H. Henderson, of London, in which he gives a new formula for making his emulsion, as follows :

No. 1.

Gelatine,	5 grains.
Water,	10 ounces.
Bromide of potassium, . .	130 grains.
Hydrate of potassium, . .	2 "

Dissolve by heat and add 4 ounces of alcohol.

No. 2.

Silver,	240 grains.
Water,	1 ounce.
Alcohol,	4 ounces.

The following gentlemen were proposed and elected as active members : Messrs. Robert D. Farlee, H. H. Edgerton, R. H. Laimbeer, H. G. Runkle and Thomas Pray, Jr.

Mr. BEACH. Some time last month I received a call from Mr. George Bullock, a member of the Cincinnati Amateur Photographic Club, who showed me a number of photographs

which he had made, and explained a very ingenious apparatus and shutter for exposing in a camera. He promises to send me a full description of them.

Among other things he suggested was, that the various amateur societies exchange lantern slides, so that the pictures taken in different parts of the country can, in this way, be shown to all.

I would like to have members commence making lantern slides from their best negatives, so that we may have an ample source to draw from in the future. The intention is to use a lantern, not only for exhibition, but also for enlarging negatives on either platinotype or gelatino-bromide paper.

The PRESIDENT then introduced Mr. C. A. Needham, who read the following paper and proceeded to demonstrate and explain in detail this interesting process.

The Platinotype Process.

BY C. A. NEEDHAM.

It will take far less time to describe the platinotype and show you the details of the process than it took the inventor to perfect it. We are told that it came of much discouraging but determined efforts upon the part of its discoverer, Mr. W. Willis, Jr. What eight years ago seemed to him an almost unattainable solution of an intensely interesting problem, has become a very simple method of producing a print from the negative, which may possess these two attractive recommendations, artistic merit and durability. In general, a description of the process is as follows : The sensitized paper, prepared with salts of iron and platinum, is exposed in the usual way, under a negative or in the solar camera. It is then floated for five or six seconds upon a hot solution of oxalate of potassium, and afterwards washed in a weak solution of hydrochloric acid and finally in water. I have here some 18 x 22 sheets of plain paper, sized to receive the sensitizing material already referred to, and consisting of the salts of iron and platinum. The latter is a dry powder, and the iron is in the form of a solution. The proportions are sixty grains of the platinum to one ounce of the iron solution. This mixture should be made as required, and used as soon as possible thereafter. The preparation of the sensitized paper may be safely conducted under gaslight in a room of the ordinary dwelling temperature, free from draughts. The sheet is fastened at each corner, face upward, upon a smooth, level

surface, preferably of plate glass, and about two drams of the sensitizing solution are poured upon its center and distributed by means of the squeegee as evenly as possible in this manner. When coated, the sheet is hung up to surface dry in a damping closet, which is simply a box containing a dish of water. After a lapse of ten minutes the sheet is transferred to a hot-air box and there thoroughly dried. The surface-drying part of the process is important, for it appears to determine the fixation and depth of the image upon the paper after development. If insufficiently done, or omitted altogether, practice has shown that part of the image will float off in the developer instead of adhering to the fibre of the paper, and a consequent loss of half-tone will ensue, and that, upon the other hand, if the surface-drying interval be too long, say a longer period than twelve minutes, the image will appear flat from being too sunken into the paper. I have here some pieces of the platinum paper which have been exposed. These I will proceed to develop, and at the same time I will give you the theory of the platinotype process and a more specific description of it. The platinum used is a double salt known as potassic-chloroplatinite. The iron solution is ferric oxalate. By the action of light the ferric oxalate deposit is reduced to ferrous oxalate, which is soluble in hot oxalate of potassium, and instantly dissolves when floated upon it, but in the act of dissolution it leaves upon the paper the platinum precipitated to its metallic state. Thus we have the picture in platinum black, which, it is claimed, will withstand the severest test for durability. The sensitized paper before exposure to light is of a lemon yellow color. During exposure the parts affected by light become of a pale grayish-brown color, and frequently of a dingy orange tint under those parts of the negative which present clear glass or nearly so.

The correct exposure is ascertained by inspection of the paper in the ordinary way in a weak light. Great care should be taken to avoid undue exposure to light during examination of the progress of printing, as a very slight action of bright white light will degrade the more delicate whites of the picture, and the extent of the damage cannot be discovered until after development. It is also of the utmost importance that the sensitized paper be kept dry before and after exposure. For the purpose of perfectly preserving it, metallic tubes such as this I now show you are made

specially to hold it. They are provided with a receptacle containing a dry preparation of chloride of calcium as an extra safeguard against moisture.

The development, which should be conducted in a weak white light, is effected by floating the printed surface upon a hot solution of oxalate of potassium, the proportions of which are 130 grains of the oxalate of potassium to each ounce of water. This solution should be slightly acid, and if not found so upon test with blue litmus it may be rendered so by the addition of a few drops of a saturated solution of oxalic acid. This liquid is generally held in a flat enamelled iron dish supported upon a tripod, under which is placed a spirit lamp. To avoid air-bubbles, place one edge of the print upon the solution first, and gradually lower the remainder with an even sliding motion. Then for the purpose of examination, raise the sheet by the edge which first came in contact with the liquid. It will take at least five seconds to develop a print fully, and sometimes the depth of shadows may be enhanced by continuing the development even longer. There is a very great latitude allowable for the temperature of the developing solution, from 100 deg. to 180 deg. Fahr. and upwards. Over-exposed prints may be frequently saved by using a low temperature, and under-exposed ones by employing a high one. The best results are, however, obtained from negatives which admit of development at a temperature of from 170 deg. to 180 deg. Such negatives will be found to possess considerable density in the high lights, a full scale of half-tones with clear glass or nearly so for the deeper shadows. After development the prints go directly into the cleansing baths. These are made of chemically pure hydrochloric acid, one part to sixty of water. Generally not less than three are used of about equal strength, and the prints are passed from the first to the third, allowing an interval of about ten minutes between each change. As the object of this washing in dilute acid is to remove all traces of the iron salt, the operation should take place in the day time, so that the baths may be brought into the full open white light, under which conditions the presence of the freed yellow salts may be easily and surely detected. The prints should not communicate the slightest tinge of color to the last acid bath. The plain water washing should continue for about fifteen minutes to remove the acid from the paper, but should never be re-

sorted to until all trace of the iron salt has disappeared. After thorough cleaning, the prints may be dried by hanging them upon glass rods, placing them upon muslin stretchers or chemically pure blotting-paper. As they resemble engravings and such pictures as the photo-gravure, they look well mounted upon rather large cardboards which provide white margins. I will invite you to examine some samples of a fine grade of platinotype printing and some exquisite studies which were kindly made for this occasion by Mr. Geo. W. Wood, an artist of Philadelphia. The solar enlargements and linen printing are from the establishment of Messrs. Hoyt & Siebert of this city. There are some slight modifications of the process which adapt it to solar printing and for impressing other fabrics than paper, which I will not trespass upon your time this evening to describe. I hope that what I have shown has been sufficient to enable those who may feel so disposed to make a few successful experiments with this beautiful art, and for that purpose the paper we have sensitized this evening is at your service, and, that the samples I have just developed may be acceptable to the Society as souvenirs of this demonstration, many of which show the refined taste of Mr. Lafayette W. Seavey in figure posing and arrangements of draperies or accessories.

A vote of thanks was unanimously tendered Mr. Needham for his address and explanations.

Mr. R. A. C. SMITH next exhibited and explained a Hare 4-4 camera, provided with an extension bed and improved shutter, and also illustrated the working of a very complete and well finished changing-box which accompanied the camera.

Mr. BEACH. I have here a series of photographs handed me by Mr. William H. Hale, which are called composite photographs, and the process by which they are made consists of taking (say) thirty individuals and making a separate negative from each, and then printing from each negative, one over the other, upon a piece of paper, having the focus fixed on the eyes, so that the eyes of each individual correspond in position. The object was to see what type of head or face a certain class of persons would have. I will show you first portraits of thirty-one members of the New York Academy of Science superimposed one upon the other. The next is twelve mathematicians; the next is sixteen naturalists; the next is twenty-six

members of the transcontinental survey of the Northern Pacific Railroad.

Dr. JANEWAY then presented to the Society copies of a printed table showing the solubility of chemicals in water. (See page 549.)

Mr. BEACH. We will now take pleasure in listening to Mr. Dean, who read the following article, for which the thanks of the Society were duly voted.

The Relative Rapidity of Lenses and the Use of Stops.

BY C. W. DEAN.

In photography one lens is said to be more rapid than another when the light passing through it in a given time produces greater chemical changes. This rapidity is governed by several elements; among these are, the color of the lens, the number of its reflecting surfaces, its equivalent focus, and the size of its aperture.

In answer to our inquiry as to whether there was any mathematical formula to express the relation between the areas of apertures and the duration of exposures, Pres. Barnard, of Columbia College, says: "The hypothesis on which the Photographic Society of Great Britain have founded their law is, that chemical changes effected by light are more rapid in proportion as the intensity of the light is greater; and this with so severe mathematical accuracy that a double intensity will reduce the time necessary for exposure by one-half.

"But this is an entirely *a priori* assumption. It has been adopted because it seemed as if it ought to be so, and not because experiment has proven that it is so.

"Before attempting to construct a formula which should express the relation of intensity of light to the duration of exposure required to produce a definite amount of chemical change, we should require to know more than we do about the laws which govern chemical changes during their progress; for the law which you find to fail takes it for granted that the resistance to change opposed by a chemical compound to the action of light is uniform from beginning to end, a thing which we have no right to affirm. I know of no better means of determining this relation between the area of lens and the proper duration of exposure than careful experiments, systematically conducted, with lenses of various areas, and with similar illumination throughout. An empiri-

cal law might thus be ascertained, which, for practical purposes, would answer quite as well as a theoretic formula mathematically expressed."

The laws governing the rapidity of the lens, neglecting its color, and the number of its reflecting surfaces are—

1st. The relative rapidity of two lenses having the same apertures is inversely as the squares of their equivalent foci.

2nd. The relative rapidity of two lenses having the same equivalent foci is nearly as the areas of their apertures. For example: two lenses having the same sized apertures, one having an equivalent focus of twelve inches and the other of six inches, the lens with the six inch focus will be four times as rapid as the other; or two lenses having the same equivalent foci, one with an aperture two inches in diameter and the other with an aperture of one inch, the two inch lens will be approximately four times as fast as the other.

The Photographic Society of Great Britain, in order to overcome the great confusion arising from the different systems, or rather lack of system, used by different opticians in numbering their stops, have adopted a "universal system" based upon the ratio between the diameter and the equivalent focal length of the lenses with which they are used. As a basis of their system they have taken a portrait lens the diameter of whose aperture is one-fourth its equivalent focal length, calling that stop or aperture No. 1. Stop No. 2 is one of half the area, and therefore requires approximately twice the exposure. In this universal system the number of the stop represents the number of seconds' exposure required by the stop when stop number 1 requires an exposure of one second.

I think a modification of this system would be of the greatest possible advantage to amateurs in enabling them to express the duration of exposure in terms which are common to all lenses.

Those of us who have attended any of the Society's excursions during the past summer must have felt disappointed in the small amount of information we were able to obtain from each other regarding exposure, owing to our lack of knowledge as to the rapidity of our lenses and the relative value of the stops we were using. This can be easily remedied by representing the size of our stops in terms of the focal length of the lens.

Expressing the size of the stops by their di-

ameters, as is frequently done, is only misleading, and unless the focal length is given is of no practical use. A half-inch stop used on a lens with an equivalent focus of 12 inches would require four times the exposure that the same stop would require on a lens of six inches equivalent focus. As the rapidity of lenses is controlled by their equivalent focal lengths, and also by their apertures, no scientific or "universal system" of stops can be made except one based upon these two elements, the ratios between the areas of apertures and duration of exposures having been determined by careful experiments.

In order to correct a very general misunderstanding regarding what is meant by equivalent focus and how it is obtained, it may be advisable to state that the expression is used in connection with compound lenses, and means a focus of some distant object equal to that produced by a single plano-convex lens, with the plane side toward the object, producing an image of the same distant object of the same size. In the case of the plano-convex lens, we can easily measure its focal length by measuring the distance from the image on the ground glass to the convex surface of the lens.

In compound lenses, however, this will not give us the true focal length, but what is usually called the back focus.

The equivalent focus of a compound lens is the distance from the image on the ground glass of some very distant objects to a point within the lens called the center of emission. This point is obtained by a formula based upon the radii of the curves of the different lenses and the refractive power of the materials used in the lenses. Fortunately it is not necessary for us to use the formula, for the equivalent focus of any form of lens can be easily obtained in the following manner.

Mark two perpendicular lines on the ground glass equidistant from the center. Set the camera on a sheet of paper and focus on some point in a very distant object. Move the camera so that this point will fall upon one of the lines on the ground glass. Draw a pencil along the side of the camera, ruling a line on the paper underneath. Now partially rotate the camera on a center passing through the center of the lens, until the point falls upon the other line on the ground glass, and draw another line on the paper. Extend these two lines until they meet. Bisect this angle with a line upon which you erect a perpendicular equal in length to one-half the distance be-

tween the two lines on the ground glass; connect the top of this perpendicular and the bisecting line with a line parallel to the side of the angle. The distance from the point where this line touched the bisecting line to the foot of the perpendicular is the absolute focal length of the lens used.

The object in focussing upon a very distant object is that we may obtain the focus from parallel rays. This focus is represented by f , and of course is entirely different from the focus of converging rays from an object near the lens.

A practical fact regarding the equivalent focus of the lens is that it controls the size of the image; that is, two lenses of the same equivalent focus, when focussed upon any distant object, will produce images of the same size. A lens having twice the focal length of another when placed in the same spot and focussed upon the same distant object, will produce an image having twice the linear dimensions of the image given by the first.

Having obtained the equivalent focus of the lens, we can designate our stops in terms of f by means of a fraction; the numerator of which is equal to the diameter of the stop, and the denominator is equal to the equivalent focus of the lens. Reducing this fraction to an equivalent one whose numerator is unity, we have a fraction which means that the diameter of the stop is $\frac{1}{3}$, $\frac{1}{2}$, or $\frac{1}{4}$, as the case may be, of the focal length of the lens. To show that the focal length is the one from parallel rays the fraction is usually written $\frac{f}{3}$, $\frac{f}{2}$, $\frac{f}{4}$.

Having marked our stops in terms of their focal length, we can approximately ascertain the relative duration of the exposure required by each by remembering that these fractions represent the diameters of apertures whose areas are to each other as the square of these diameters, and that approximately the duration of exposure is inversely as the areas of the stops. For example, to ascertain the relative time required by two stops $\frac{f}{10}$ and $\frac{f}{30}$. The area of the first can be represented by $(\frac{1}{10})^2 = \frac{1}{100}$, and the second by $(\frac{1}{30})^2 = \frac{1}{900}$. This shows that the first stop is nine times as large as the second, and approximately requires $\frac{1}{9}$ th the time for exposure.

The same result is obtained by dividing one fraction by the other and squaring the result.

While the above rules will assist us in obtaining correct exposures with the different sized stops, an equally important question is, "which stop shall I use?"

Up to certain limits, the smaller the stop the greater the sharpness, depth of focus, and size of good picture obtained.

The small stop, however, produces a map-like effect, and tends to harshness of contrast and to diminish aerial perspective. Some opticians say that the diameter of the smallest stop should never be less than $\frac{1}{25}$ th or $\frac{1}{30}$ th the focal length of the lens.

On the other hand, the larger the stop (if correctly exposed) the greater the amount of detail in the shadows, the bolder the pictures, and the greater the amount of "atmosphere." Probably the best rule to adopt is to use a stop small enough to give sharp definition at the edges of the picture, and *no smaller*.

To secure uniformity in our work and enable us to aid each other in answering that vexing question, "How long shall I expose?" I would suggest that the members of the Society mark their stops in terms of f , and also with a figure representing the approximate relative value of the stop as compared with the full opening of the lens with which it is used. For example, a stop marked $\frac{f}{2}$, would mean that the stop requires seven times the exposure of that of the full opening of the lens, and the diameter of the stop was equal to $\frac{1}{2}$ of the focal length of the lens.

As most of us use lenses working no faster than $\frac{f}{7}$, the adoption of the "universal system" based on $\frac{f}{4}$ would necessitate an amount of mental arithmetic which some of us might consider tiresome. In this system the first figure would show the relative exposure as compared with the other stops, while the fraction would show the rapidity of the lens as compared with other lenses.

By adopting this system the members of the Society would be able to obtain correct exposure with any lens, regardless of the maker or its form, and we would not be tied down as at present to the particular lens with which we are familiar.

Our work as a Society, to be effective, must be systematic, and it seems to me that among the first things we should do is to adopt some system of stops.

Mr. BEACH then offered the Society an improved formula for sulphite of soda intensifier by Scolik, of Vienna.

Solution No. 1.

Bichloride of mercury, . 1 oz. = 437 grs.
Bromide of potassium, . 1 oz. = 437 grs.
Water, 50 oz.

The above may be diluted four times its volume if desired, in order that the action may be gradual and less energetic. The fixed and well washed negative is allowed to remain in No. 1 until the film becomes well whitened. If a small degree of intensification is desired it should be left in but a short time.

The plate is next slightly rinsed off (a thorough washing not being required at this point) and immersed in

Solution No. 2.

Saturated sol. of sulphite of soda, 5 oz.
Water, 5 oz.

The darkening action will be observed to take place gradually, as in the case when ammonia is used, and will impart a rich brown-black color to the negative, which should be well washed; negatives thus intensified are believed to be permanent.

Mr. H. J. NEWTON then gave the following formula for a developer, well adapted to bring out fully the details in a plate which has had a very short exposure:

No. 1.

Water, 1 ounce.
Carbonate of soda, 15 grains.
Yellow prussiate of potash, . 15 grains.
Sulphite of soda, 5 grains.

No. 2.

Water, 1 ounce.
Chloride of ammonia, 7 grains.
Pyro (dry), 6 grains.

Nos. 1 and 2 are mixed, and the whole poured over the plate. Development commences within a minute, and is usually finished at the end of three or four minutes. The proportions named above are correct for an ordinary drop shutter exposure, but they are not arbitrary; they may be varied to suit different cases, as, for example, should the plate have been greatly under-exposed, equal parts of Nos. 1 and 2 (with the pyro. left out of the latter) may be added a little at a time, from three to four times the strength stated, until all the details in the shadows are brought out, without danger of producing green fog, which frequently appears from the excessive amount of ammonia sometimes used in the ordinary ammonia and pyro. developer. In case of over-exposure, half a grain to the ounce of developer of bromide of sodium is added, and the solution diluted with water.

Nos. 1 and 2 solutions may be kept in a more concentrated form, and diluted for use.

The following are the right proportions for 10 per cent. solutions:

No. 1.

Water, 9½ ounces.
Carbonate of soda, 480 grains.
Yellow prussiate of potash, 480 grains.
Sulphite of soda, 160 grains.

No. 2.

Water, 9 ounces.
Chloride of ammonia, . . . 510 grains.
Solution of one drop of sulphuric acid in one ounce of water, 1 drop.
Pyro (1 commercial ounce), 437 grains.

If No. 2 does not change from a purple to a clear yellow color within an hour after mixing, one or two drops more of the sulphuric acid solution may be added.

To prepare a developer of the proper strength with the above solutions for the development of a 5 x 8 plate, which has had a drop shutter exposure, take

Water, 5½ drams.
No. 1 solution, 2½ drams.

Also:

Water, 7 drams.
No. 2 solution, 1 dram.

Mix the two, and develop in the usual way. The proportions given will be equivalent in grains to those stated in the first formula.

Mr. Newton described some interesting experiments, which substantiated very forcibly the value of the developer for instantaneous work. Two plates exposed precisely the same time, on the same object, were developed side by side, one with the developer as prescribed in the directions of the manufacturer of the plate, and the other with the above developer.

Plates were shown which had been kept for some time, in which was seen the marking of the dividing mat and a general foggy appearance proceeding from the same cause. Mr. Newton had discovered that by adding a small quantity of bromide of sodium—half a grain to the ounce of the developer—all traces of the effect of the separating mat and all indications of metallic silver disappeared, the plates developing clear and free from such defects. He advises the use of bromide for plates affected as described. His theory of the developer was, that when the chloride of ammonia or No. 2 solution was mixed with No. 1, the chloride of ammonia was decomposed, ammonia being liberated, which, acting in conjunction with the yellow prussiate of potash and carbonate of soda, produced an extremely powerful developing

agent, while the chlorine liberated from the chloride of ammonia acted, or seemed to act, as an agent to prevent the discoloration of the film.

The new developer, the work of which I propose to show you, is based upon the fact that certain alkaline carbonates decompose most of the salts of ammonia and liberate ammonia as the result. Those of you who have worked for a number of years, especially the carbonate of soda process, will remember that when I first introduced it I recommended the use of bromide of ammonium, and that the ammonia salt was decomposed and the ammonia liberated. Even when you used a grain or half a grain to the ounce the fumes were apparent. Now the action of that liberated ammonia, if you undertook to force the picture at all, produced a red fog, which was green by reflected light, the liberated bromine not acting at all in restraining the action of the ammonia in producing such a fog. That is the danger of ammonia in a developer when you attempt to force the development. Now I have found a way by which you can decompose the alkaline carbonates, either potash, soda or lime water without the possibility of fog. Many of the salts of ammonia combined with any of the carbonates that I have mentioned are instantly decomposed, and the ammonia liberated, and the free chlorine entirely prevents any coloration of the picture from the developer in consequence of oxidation.

Now you not only get that, but you get additional vigor in the action of the developer. There are several things this developer is useful for; it is useful in determining the age of a gelatine plate. These two plates were exposed last Saturday from the long pier at the foot of East 26th Street; it runs out into the river about 600 feet. There were but few vessels in the river and it was blowing a gale. I had a gentleman with me who is one of the most extensive manufacturers of plates in the country, and we exposed on a group of men and boys fishing at the end of the pier. We exposed two plates as nearly together as we could, taking them from the same box, and for the same period of time with the drop shutter. We took them home, and he made up his developer and I made mine, using twelve grains of soda, which is half the strength I generally use in developing instantaneous pictures. We poured it on simultaneously, and continued it until he said he could get nothing more with that developer. We took them out and treated

them exactly alike. I will pass them around, and you will observe the one that shows the most exposure was with this developer, with only twelve grains of alkali, and was fully exposed; the other is not half exposed.

Mr. W. E. PARTRIDGE showed two negatives, which he had developed with the developer, that were very clear and of excellent printing quality. He was much pleased with the working of the developer. Mr. F. C. Beach stated that he had also tried the developer, with satisfactory results. It acted very quickly, kept clear, and was of a light straw color by daylight when first mixed, afterwards turning to a sherry color. Free ammonia was easily perceived, showing that the action was similar to Mr. Newton's explanation.

Two negatives were shown by Mr. Beach which had had extremely short exposures; one was developed with the formula as given, and was of a dense greenish-yellow color; the other by a modification consisting of the use of a sulphurous acid soda sulphite solution of pyro in place of dry pyro, as advised in No. 2. It had a clear, grayish, wet plate appearance, and, in his opinion, developed up better, although somewhat slower. In each case an equal amount of detail was brought out in the shadows. A sample of the developer was shown, after it had been used in the development of two plates and had been standing for twelve hours; it was clear, but of a sherry color.

A social meeting will be held on the 3d prox. At the regular meeting of Dec. 9th, the subject of *Enlarging by Artificial Light* will be treated by Mr. Beach and others, illustrated by practical demonstrations.

Adjourned.

The Picture and Art Trade.

LATE numbers of the *Picture and Art Trade* from Mr. T. Sawtelle Ford of Chicago have reached us, bearing evidence of the fact that in discontinuing the publication of *Photography* the editor has not ceased publishing important facts concerning it and its kindred arts. The issue for November contains a description and engraving of the Fawkes show-case; a useful article on the *Making of Lantern Slides*, others on *Photogravure*, *Fading*, and the *Fairy Camera*, together with many useful items of general interest.

TABLE

OF THE

SOLUBILITY OF CHEMICALS IN WATER.

Carefully Compiled by DR. JOHN H. JANEWAY, U. S. A.

CHEMICALS.	WATER.		CHEMICALS.	WATER.	
	59° F.	212° F.		59° F.	212° F.
One part is soluble in :	Parts	Parts.	One part is soluble in :	Parts.	Parts.
Acid, Citric.....	0.75	.05	Potassium, Acetate.....	0.4	v. s.
Formic.....	v. s.	v. s.	Bicarbonate....	3.2	dec.
Gallic.....	100	3	Bichromate.....	10	1.5
Oxalic.....	8	1	Bromide.....	1.6	1
Pyrogallic.....	3.5	v. s.	Carbonate.....	1	0.7
Tannic.....	6	v. s.	Cyanide.....	2	1
Alum,.....	10.5	ins.	Ferrocyanide....	3.8	2
Chrome.....	10	dec.	Ferridcyanide...	4	2
Ammonia, Nitrate.....	0.5	v. s.	Ferricyanide...	4	2
Chloride.....	3	alm.	Nitrate.....	4	0.4
		ins.	Iodide.....	0.8	0.5
Carbonate.....	4	dec.	Oxalate.....	v. s.	v. s.
Sulphocyanide...	v. s.	v. s.	Permanganate..	20	3
Ammonium, Bromide...	1.5	0.7	Sulphate.....	9	4
Iodide (white)..	1	0.5	Sulphite.....	4	5
Baryta, Nitrate.....	8	3	Sulphuret.....	2	1
Cadmium, Bromide.....	v. s.	v. s.	Silver, Nitrate.....	0.8	0.1
Iodide.....	v. s.	v. s.	Oxide.....	v. sp.	v. sp.
Copper, Acetate.....	15	5	Sodium, Acetate.....	3	1
Sulphate.....	2.6	0.5	Bromide.....	1.2	0.5
Gold, Chloride.....	v. s.	v. s.	Bicarbonate.....	12	dec.
Gold and Sodium, Chloride.	v. s.	v. s.	Carbonate.....	1.6	0.25
Iron, Chloride.....	v. s.	v. s.	Citrate.....	v. s.	v. s.
Phosphate.....	v. s.	v. s.	Granulated.....	v. s.	v. s.
Pyrophosphate.....	v. s.	v. s.	Hyposulphate....	1.5	0.5
Sulphate.....	1.8	0.3	Hypsulphite.....	1	0.12
and Ammonia Sulphate	3	0.8	Iodide.....	0.6	0.3
Iodide.....	v. s.	v. s.	Nitrate.....	1.3	0.6
Iodine.....	7000		Phosphate.....	6	2
Kaolin.....	ins.	ins.	Pyrophosphate....	12	1.1
Lead, Acetate.....	1.8	0.5	Sulphite.....	4	0.9
Chloride.....	ins.	33	Sulphate.....	2.8	0.4
Nitrate.....	2	0.8	Tungstate.....	4.0	2.0
Lime, Bromide.....	0.7	v. s.	Strontia, Chloride.....	1.88	v. s.
Chloride.....	1.5	v. s.	Uranium, Nitrate.....	v. s.	v. s.
Lithium, Bromide.....	v. s.	v. s.	Chloride.....	v. s.	v. s.
Iodide.....	v. s.	v. s.	Persulphate.....	v. s.	v. s.
Magnesia, Nitrate.....	v. s.	v. s.	Zinc, Iodide.....	v. s.	v. s.
Mercury, Bichloride.....	16	2	Bromide.....	v. s.	v. s.
Cyanide.....	12.8	3	Chloride.....	0.33	

ABBREVIATIONS.—s, soluble ; ins, insoluble ; sp, sparingly ; v, very ; alm, almost ; dec, decomposed.

Another Ambitious Novelty.

ONE of the most ambitious novelties we have yet had the pleasure of inviting attention to is the Railway Studio, as our old friends, Messrs. Reed & Wallace of Mobile, have advised us through the medium of a little leaflet called *The Photographer on Wheels*. It is built in the ordinary form of a railway car, 47 feet in length, 10 feet high, and 10 feet 4 inches in width. From the front platform the reception and ladies' room are entered, which have all the usual requirements for comfort. The central portion is the skylight, 24 feet in length, fitted with many novel appliances. The roof has a combination sash, curtains and shades, so arranged as to be shifted from side to side as the hour and position of the car may render necessary. Both the dark room and the operating room are supplied with everything for first-class work. The rear is devoted to culinary and other purposes. Under the car is a locker for rails, cross-ties and everything necessary to form a side track, and over the car a large substantial awning can be drawn to afford ventilation and shelter from the sun. We are not aware of the cost, but the expense can certainly not be inconsiderable, and we trust the enterprising gentlemen will find their venture a pleasant and profitable one.

New Catalogues.

ELSEWHERE we have alluded to a new catalogue from Smith & Pattison, of Chicago. It is just out. There are 163 mammoth pages, containing everything ever asked for, we should think, and at fair prices. It is printed in blue with a "daisy" cover.

Another, not so very different, comes from Mullett Bros. of Kansas City, containing 148 pages. It is also finely printed and a useful thing to have in the photographic household. Send for both and take your choice.

HON. FRANCIS HENDRICKS is re-elected to the State Legislature by an increased majority. He has already been honored with the mayoralty.

Pictures Received.

MR. GEO. F. BLACKBURN of Grand Forks, D. T., sends a group of five Jersey cattle. The animals are evidently facing the camera, and look quite ready to face the music, should opportunity offer. There is a wonderfully life-like and inquisitive expression on the countenances of the pretty creatures and a pleasing variety in the pose. One member of the party seems quite concerned lest her interesting contour should not be faithfully depicted. The execution leaves nothing to be desired.

Mr. Edgar Cherry of San Francisco, Cal., sends some views that are very interesting from the fact of being recent photographs of the mammoth trees that have been felled and loaded in sections on trains. The pictures were evidently taken under unfavorable circumstances; but those accustomed to that kind of work regard them as remarkably good, the natural color of the wood being very non-actinic.

Mrs. R. Maynard of Victoria, B. C., sends some remarkable pictures in the way of groupings and statuary. One of them, the Gem Begonia, is really a pretty and successful effort, in which scores of youngsters are grouped on the leaves of the plant and in the flower-pot in a very pleasing and artistic fashion. The regular portraiture is, to our taste, somewhat peculiar, and perhaps a trifle too rigid in background and accessories, that of the "Fairy Dell" especially.

From Wm. R. Wright, of Princeton, Ind., several cabinets. The chemical effects are unusually fine, and also the printing and toning; there is room for improvement, however, in the lighting and posing.

MR. P. C. DUCHOCHOIS will begin his course of lectures on photographic chemistry on Wednesday, Dec. 3, at the rooms of the Operative Photographers of this city, 392 Bowery. They promise to become very popular and quite instructive. We hope there may be room for all who propose to listen to them.

Our Illustration.

NAPOLEON SARONY.

OUR illustration this month is a fine one of what the world now very generally regards as the master in photographic portraiture. What the *World* says about him may be seen from the following, published in its Sunday edition of Nov. 9 :

"If there is a living born artist, one in whom are centred all those qualities characteristic of a genius and a great master of the pencil, it is Sarony, whose name has grown famous and become a synonym for all that the word art implies. From infancy it was his failing to cover all his books, in school and out of it, with sketches, and in all the years of his after life he has never ceased to make pictures. His father's ancestors were Italian,* but Napoleon first saw the light of day in Quebec, Canada, in 1821, the year of Napoleon Bonaparte's death, after whom he was named. At ten years of age he came to New York, and at twelve he was thrown on his own resources by the death of his father. He began life as a lithographer, and one year before he attained his majority he formed the firm of Sarony & Major, to which the name of Knapp was subsequently added. In 1860 Mr. Sarony retired and went to Europe, remaining five years, and started photographing in Birmingham, England, but returned and has ever since been the most active man in his line. From the time that Sarony began in New York, photography took a more advanced step in the art of posing, etc. His power in giving life and shape and light and shade is remarkable. He takes great pride in telling of his early life, and how he started with not a dollar in his pocket. He has an impulsive nature, a small body and a large head. The reception-room at his gallery on Union Square is a grand museum of art and contains a rare collection of relics from all parts of the world. It is a

place where lovers of curios and high art may gratuitously feast their eyes for a couple of hours any day. Although over sixty years of age, Mr. Sarony is as spry as a boy and personally attends to all the sittings in his establishment, which gives employment to about forty assistants. Every night till churchyards yawn he is seated in his studio delineating life and beauty with charcoal. He is a member of both the Tile and Salmagundi clubs."

The prints were made in Mr. Sarony's establishment (and, of course, the negative,) on the celebrated N. P. A. Extra Brilliant (Pensé) albumen paper (a brand now in general use).

A Mining Invention by a Photographer.

MR. HENRY R. CASSEL, a New York electrician, has lately been exhibiting a new process of treatment of refractory gold ores, which has created considerable excitement among mining men and scientists. This process was to-night the subject of an interesting lecture by Dr. Atcherley. The ores need no roasting, and the gold is extracted by means of nascent chlorine generated by electrolyzing common salt. The addition of lime is necessary to prevent other metals being dissolved. A six months' trial on a large scale has resulted in a wealthy syndicate purchasing the invention for \$300,000. —*N. Y. Herald*.

Densmore Retouching Machine.

In our July issue, page 322, we published a brief description and some recommendations of the Densmore Retouching Machine, together with wood cuts. The machine, when not in service, folds down compactly into the form of a table. It will accommodate any size up to 14 x 17. Any one so desiring may find one at No. 591.

ALDERMAN NOTTAGE, the well-known photographic celebrity, is now the honored Lord-mayor elect of that little English settlement which dates back into the dim and dizzy past. That is an honor indeed.

* His father was an officer in the Black Brunswickers, and a native of Prussia. He distinguished himself in the battle of Leipzig, for which he received several decorations, but was a great admirer of the First Napoleon, after whom he named his son. — ED.

The Photographic Exhibit at the American Institute Fair.

FOR some reason not very apparent the annual exhibit of the American Institute Fair in this city, in quantity at least, becomes less and less attractive as the years roll by. One cause perhaps is the situation, or situations rather, chosen for their display. To a lover of the artistic it is unquestionably unpleasant to find his cherished specimens huddled among all sorts of the more vulgar necessities of the creature comforts. But the principal fault, if such it is, must be laid to the photographers themselves, who do not avail of the opportunities thus cheaply offered for public presentation of their *chef d'œuvres*.

As before the exhibits are scattered, the first to meet the eye being those of Messrs. Pach Brös, who have some fine portraits, large groups, interiors and marine views. The former especially deserve particular mention for their superiority, and one also of the latter labelled the Ocean from Long Branch, perhaps the finest picture shown.

Chas. D. Fredricks, has an attractive display of oil paintings, crayons, pastels and plain photographs by the old and new processes.

Mr. Parkinson's large pictures, 18 x 22 and 20 x 24, by the dry plate emulsion process, were much admired for their technical rendering. Some life and half-size photographs of animals are very superior and deserve great credit, as also his large heads, which are worthy a prize.

Mr. Parkinson has a very peculiar establishment. It is a private brown stone front at No. 29 West Twenty-sixth Street. The only sign visible is a small one resembling a physician's, with his name in small letters thereon, and a mat with the name at the front door. Entrance is only gained by ringing the door bell. The parlors are used for reception rooms, and the studio is built in the rear. Mr. Parkinson's exhibit will receive recognition.

Mr. Hargrave (formerly with Jordan and Dana) and Mr. Theo. Gubelman of Jersey City, recently established at 40 W. 23 St.,

have a fine display. Mr. Gubelman's beautiful renderings of sail, sky and water being especially good. Large interiors of ocean steamers and churches are also greatly admired, and views of out-doors ports.

The collection embraces other exquisite exteriors, a number of excellent plain portraits, crayons and water colors.

One of the most attractive displays was that of another comparative stranger, Moreno, of Fourteenth Street. Every one knows through the medium of the BULLETIN the high artistic character of all his works, and it is safe to say that rarely have any been so generally admired by the public. Besides a variety of public and private subjects in usual sizes there were a number of large heads and enlargements, that fairly astonished the multitude of admirers.

"Quick as a wink." Mr. George G. Rockwood, whom all the world recognizes as the baby photographer *par excellence*, had a goodly gathering of the innocents, and as usual a splendid assortment of photographic productions in nearly all its forms. Theatrical groups, interiors, marine, and other out-door views, as well as the usual gallery work were all of the best. Another equally creditable exhibit was that of some splendid solars, including an enormous head of a child, very well done, and full figures and groups in life size.

A similar exhibition in the same line, by Rushhaupt & Co., also found favor, a full-length of an old gentleman especially.

Crayons were represented by several, some of only ordinary merit, and others quite life like and pleasing. Among the best were those of Wilhelm and Greiner.

In addition there were several minor exhibits by gentlemen who cater to the popular tastes, whose names we do not recall.

The Galvano-plastic Decoration Art Co. and Messrs F. A. Ringler & Co. were both largely represented, and included many useful and decorative examples by the allied arts of photo-electrotyping, etc.

The air brush was also an attraction of the fair, and of course astonished the crowds of inquisitive and perspiring humanity surrounding it.

Something New.

ANTHONY'S AMATEUR PYRO. DEVELOPER.—*Directions for use*

Dissolve one bottle each of No. 1 and No. 2 in 10 ounces of water.

Fix as usual in hyposulphite of soda.

It is put up in neat packages containing six bottles each of No. 1 and No. 2. Price, 90 cents per package.

To avoid loss, packages are not broken.

It is to be had of all dealers, and of—

E. & H. T. ANTHONY & CO

Pearl Paste.

THE great sticker. Better than the best. Buy a bottle and prove it for yourself. For sale by all dealers.

CHICAGO, ILL., Oct. 25, 1884,

E. & H. T. ANTHONY & CO.

Gentlemen: In the report of the last meeting of the Chicago Photographic Association, as published in the ———, I find the following paragraph:

“Mr. Douglass exhibited Anthony's New Fairy Camera, a 5 x 8 reversible, single swing, which was admired, BUT DOUBTS WERE RAISED AS TO WHETHER IT WAS STRONG ENOUGH FOR HARD WORK.”

Now I have no interest in crying up, or running down, any maker's apparatus; but I am a believer in fair play and common decency, and therefore feel called upon to state that the words I have underlined in the above quotation constitute a *deliberate misrepresentation*.

No such expression of opinion was enunciated by anyone present, so far as I know, and, seeing that the “Special correspondent” of the *Times* was not present at that meeting, but copied bodily from my official report in the PHOTOGRAPHIC EYE, the “obvious” conclusion is, that the lines in question are a fabrication of somebody.

You are at liberty to make any use you please of this communication

Very truly yours,

J. H. DAVIES,

Sec. Chic. Photo. Ass'n.

VOL. XV.—38.

The Photographic Eye.

IF anyone would like a more weekly paper than the BULLETIN, and would like to see it, we shall be pleased to lend them an *Eye* and take their subscription for it.

Messrs. Zimmerman Bros.

WE have enjoyed an unusually pleasant visit from Mr. H. S. Finn, the representative of St. Paul's prosperous firm of Zimmerman Bros. There was only one shadow—a fleeting one—that of the portrait of a successful candidate, who brought to mind—

“Now is the winter of our discontent

Made glorious summer by the *Son of York*”—

To some, if not all. What a pity both could not have been chosen, or all four even, and taken turns, if not terms.

The New Artificial Grass Mat.

USUALLY the artificial is inferior to the natural. In this case the facts are reversed. The artificial mat is far nicer, freer from litter, and more easily cleaned. There are two sizes, as follows:

2 x 4 feet, \$2 00 2 x 5 feet, \$2 50.

WE are pleased to announce that beginning with the January number the Editorial Department of the BULLETIN will be in charge of Professor Chas. F. Chandler, Ph. D., Dean of the School of Mines, Columbia College, New York City. Professor Chandler enjoys a world-wide reputation as a man of science, and his thorough acquaintance with all the branches of chemistry and physics will be of great value.

It is hardly necessary to add that the same energy that has put the BULLETIN in the front rank as a medium of information to the photographer will still be used, not only to maintain its high standing, but to increase its value and attractiveness.

E. & H. T. ANTHONY & CO.

Mr. Paxson's Prices.

MR. PAXSON still sticks to his old prices for solar prints and is kept constantly busy. His work is unsurpassed.

New Orleans.

SOUTHWARD the star of empire wends its way. Old Sol has gone South for the winter, and will appear daily in New Orleans, where his bright beams are always bountifully shed, for all. Go there, if you can, and enjoy a delightful change of atmosphere. The Southern skies still bear a cross. See the article from our N. O. correspondent.

Do not delay your shipments, and do not lose the opportunity of going to the Crescent City. It is a long but a delightful journey, by water especially, and no one could possibly regret making it.

THOSE who care to make their own emulsion—a messy business at best—may find the plate-coater recommended by Mr. H. S. Starnes useful, especially if a number of plates have to be coated. The apparatus is a sort of wooden tray with a small slit extending entirely across one of the edges on the bottom, through which in one unbroken wave the emulsion is poured on the plate. If the slit is a little too wide, the use of a piece of cotton cloth glued over it diminishes the flow and serves also as a strainer.

The N. P. A. Pensé.

ONLY one candidate can win, it would seem, and that is the N. P. A. Extra Brilliant Pensé Albumen Paper. Quite a number of people have been conjecturing what Pensé means; some imagine it is simply this—something to *think* about and to use, while others fancy it is only a pansy. In any event it has a very pleasing tint, and everybody seems delighted with it. Send for a sample dozen to your dealers and satisfy yourself.

The Fairy Camera.

A GREAT many people have never seen a "Fairy," but we will promise this treat to any who may drop in at 591.

The Amateur Photographer

Is the title of a new weekly journal published at 22 Buckingham Street, London. The editor's name does not appear, but there are abundant evidences that its management is in good hands. From the number before us we find that a kindly feeling is manifested toward the professionals, the two first paragraphs being notices of the Photographers' Benevolent Association and the generous treatment of it by the Photographic Society of Great Britain. The price is twopence.

MESSRS. SMITH & PATTISON advertise a revolving show-case. We have not seen one of them, but judging from the wood-cut would pronounce it good. It is highly recommended. (See advertisement.)

IT is with regret that we learn of the death of Mr. H. T. Anthony on the 11th of October. The loss of this worker, so intimately connected with the progress of photography in the United States, will be felt wherever he was known. Mr. Anthony was seventy years old.

He had commenced the career of civil engineer, but became fascinated with the Daguerreotype process and chose photography for his profession, to which he devoted all his energy. In company with his brother he established the house now become celebrated and known as E. & H. T. Anthony & Co.

In the death of Mr. H. T. Anthony the photographic world loses one of its earliest investigators and one of its best writers, whose kindness of character made him beloved by all.—*Revue Photographique*.

IN our next issue we hope to give an interesting series of papers on a useful topic.

THE Messrs. Allen Bros., with true optical truthfulness, *appear* bottom side up on a subsequent page, with a fresh batch of testimonials for the "Suter lenses," that may suit a lot of people who never had one. (See Adv.)

MR. TEBO, of Air Brush celebrity has, been around again with the latest wonder, as they now term it, surprising all who have never seen with the "nude optic" the working of the "air brush." If you would like one please let us know.

Papier Mache Trees.

MR. L. W. SEAVEY has recently brought out a novelty in the way of Papier Mache Trees. Send for one of his circulars.

The Novel Retouching Desk.

THIS beautiful retouching desk attracted so many admirers at Cincinnati that the manufacturers have so far been unable to supply the demand for them. It is made of hard wood, and being handsomely finished forms a pretty ornament as well as a useful accessory in any studio. It has a false top, which can be pulled down to darken the space in front of the ground glass cut-out, and the bed on which the negative is laid can be set at any inclination to suit the convenience of the retoucher. A slide-rest allows the negative to be moved upwards or downwards to the desired position. Price, 14 00.

The Photographic Almanacs.

WE must again remind our readers of the early appearance of the photographic annuals. *The British Journal Photographic Almanac* and the *Year Book of the Photo. News* will both be laden with the best thoughts of intelligent contributors the world over. *Mosaics*, also, for 1885 will probably be worth ten times its cost. Send your orders for them as usual.

MESSRS. SMITH & PATTISON have a new price list of photographic stock in course of preparation.

WYOMING will have good representation at New Orleans. Mr. F. Jay Haynes has been appointed Superintendent, and will make a fine photographic display of the wonders and beauties of that remarkable territory.

The Bonanza Camera Stand.

PROGRESS is the order of the day. The nicest, neatest, most compact, and sensibly constructed stand is the "Bonanza." The wood cut will give a very fair idea of it. For small work, 8 x 10 and under, it is impossible to conceive of anything handsomer, more practical or simple. It is made of ash. Call and see it! The price is \$15 00.

Anniversary Supper.

ON Saturday evening, the 1st of November last, Mr. & Mrs. Wm. R. Wright, of Princeton, Ind., entertained their friends very pleasantly in discussing the edible bivalve, after which a paper was read by Mr. Wright on the history of the "beautiful art." The paper was listened to with relish, and then a social chat was indulged in. The festivities were held under the skylight, transformed from the old town hall, which was brilliantly illuminated. The guests were representative business and professional men of that city, who complimented their hosts on their enterprise and success.

August and September.

IF anyone has spare copies of the August and September numbers of the BULLETIN for the current year we should be glad to receive them, and would willingly pay 25 cents each for a few, where money is an object.

Instruction for Using Extra Brilliant N. P. A. Paper.

FOR BROWN TONES.

a. Silver Bath.

Nitrate of silver, . . . 100 grams.

Distilled water, . . . 1000 "

The bath must be filtered before using it and stirred after each sensitized sheet.

b. Toning Bath.

1st Sol.	{	Acet. of soda, d'ble fused,	4½ grams.
		Distilled water, . . .	1000 "
2d Sol.	{	Pulverized borax, . . .	3 "
		Distilled water, . . .	1000 "

One hour before using mix both solutions in equal parts. Having dissolved—

6 centigrams=1 grain chloride of gold in water, add this to the quantity of 60 grams of the above solution.

c. Fixing Bath

Hypo sulphite of soda, . . . 100 grms.

Water, . . . 1500 "

The prints are fixed in fifteen minutes

All the baths must have a *uniform temperature, to avoid blisters*. The sensitized sheets and the washed prints must not be dried too quickly. The prints are to be mounted moist.

1 ounce=30 grams.

1 grain=0.06 " (6 centigram-).

100 grams=3½ ounces.

1000 " or 1 Litre=35 ounces.

FOR BLACK TONES.

Silver Bath: 50 grains to 1 ounce of water, slightly alkaline; float the paper one and a half minutes; dry thoroughly before fuming; have the fuming box very dry, and fume 30 minutes. Before washing, immerse the prints in a bath of acetic acid and water, 1 ounce of acetic acid to 16 ounces of water. Allow them to remain in it until decidedly red. Do not let the prints lie motionless, but move them around in the water. Wash well and then tone. Add enough gold to tone, neutralizing with sal soda. Either test with litmus paper or judge by the slightly slippery feeling of the solution.

Fix as usual (1 ounce of hypo. to four ounces of water). They are then put in a solution of salt and water (1 quart of salt to 10 quarts of water) to prevent blistering. Then wash.

The difficulty with many seems to be in the insufficient fuming of the paper, rather than in the bath.

The Magic Camera Stand

THIS resembles the Handy Camera Stand, and has taken its place. It is made of ash, is nicely finished and supplied with the windlass and pulley system of elevation, and has a roller stop which holds and binds the center shaft automatically at any height, requiring no screw. It has also a self-acting appliance for tilting the top, (which can be lowered four inches more than ordinarily), and the best casters, it is claimed, ever made. Price, \$13 50.

Singular Case.

A RATHER singular case has lately occupied the attention of the London Police Courts, wherein the well known firm of A & G. Taylor were prosecuted for having the words "Photographers to the Queen" on their business premises and advertisements. Under a recent act this becomes a misdemeanor, punishable by fine or imprisonment. Being the first instance of the kind, and occasioned possibly by some misunderstanding of technicalities, only a nominal fine was imposed.

NEW YORK, Nov. 24, 1884.

MESSRS. E. & H. T. ANTHONY & Co.

Dear Sirs: I am delighted with the "Fairy" camera which I ordered. It seems to be simply perfect in every particular.

Very truly yours,

J. L. WILLIAMS.

As we go to press the second competitive Exhibition of the Society of Amateur Photographers of Boston is in progress. We shall be glad to receive some account of the results shown.

ANTHONY'S

PHOTOGRAPHIC BULLETIN

FOR DECEMBER, 1884.

COPYRIGHTED DEC., 1884, BY E. & H. T. ANTHONY & CO.

ADVERTISEMENTS should reach us by the 5th and 20th of the month, preceding issue, otherwise we cannot promise to publish them in the succeeding number. It is also necessary to notify us of any alteration or omission before the date above named, and to state for what period the advertisement should be continued. Standing advertisements will be charged twenty per cent. less.

The rates for advertising are—

Page, for a single issue,	\$15
Half page, " "	8
Quarter page, " "	5
Eighth page, " "	3
Special Notices, per line,	25 Cents.

Anthony's
Photographic Bulletin,
Semi-monthly.

ILLUSTRATED.

Terms for 1885: Two Dollars.

Unillustrated, One Dollar.

Payable in Advance

VOL. XV.—39.

❖ PROSPECTUS. ❖

TWO NUMBERS FOR ONE.

ANOTHER agreeable surprise awaits our readers. Henceforth they will receive two numbers of the BULLETIN monthly instead of one, and the issues will appear promptly on these dates—the 10th and 25th.

Every other number will be illustrated, and the SUBSCRIPTION RATE WILL REMAIN THE SAME, viz—

Unillustrated Edition, \$1 00 per annum.	
Illustrated " " " "	2 00 " "

Professor Chandler, Ph. D., LL.D., will be the editor, supported by an efficient corps of contributors and assistants; thus, besides the best selections from foreign journals, the BULLETIN will likewise contain ORIGINAL articles on everything connected with the art from the pens of many gentlemen of high standing and culture.

In addition several new and important changes are contemplated, which time will duly reveal. Among other things we might add that the proposition of publishing week-

ly has been under advisement for the past six months, and if experience may justify and our friends insist, we shall not be adverse. For the present, however, in our judgment no such necessity exists.

In short, nothing will be left undone to render the BULLETIN the most attractive and desirable photographic journal in America, as it will also be the cheapest.

In a handsome new dress, and containing matter for all tastes, it promises to be still the first of its class.

THE PUBLISHERS.

—1885.—

THE outlook for 1885 is not discouraging. Never was there greater activity in photography than at present, and there are few things so near to the public fancy. Viewed scientifically or commercially, the immediate future is full of promise; and so rapid, indeed, are the changes, they can barely be recorded. That there will be many more during the coming twelvemonth is very probable. Rarely has it been quite so necessary for the professional, at any rate, to keep informed of each new discovery.

Every day photography has many accessions—the most assiduous and talented men the world over are flocking to its standard.

Gelatino-bromide has completely revolutionized the art, and inspired thousands upon thousands of every rank and condition with a desire to avail of it.

Tailfer, Eder, Vogel and others are strenuously searching in organic chemistry for a solution of the last great problem—photography in color; indeed there are rumors, faint, perhaps, but seemingly well founded, that 1885 is to witness the crown-

ing wonder—photography in color by development.

An enterprising manufacturer of dry plates already announces paper *in endless roll* as a support for the sensitive film, and this also will undoubtedly afford fresh impulse.

Commercially the field is ever widening, and more territory is being constantly submitted to the peaceful sway of the camera. New Orleans, too, will shortly attract its millions from the extreme South, and make new conquests. We have passed the political rubicon in safety, and everybody has now time and opportunity to assist in the phenomenal development of this busy land.

As a practical, inexpensive, reliable medium of information in all that pertains to photography the BULLETIN has ever aimed to take the lead, and will do so still. Under its new editor, Professor Chandler of this City, its character and usefulness are assured.

With new methods and renewed effort we hope to merit continued favor, and contribute our mite towards the attainment of such a genuine prosperity as has never yet been seen.

The complements of the season to all.

E. & H. T. ANTHONY & Co.

The Hat Used as a Camera.

THE photographic hat of M. Marco Mendoza consists of a hat used as a camera, the opening for the lens being on top. A wooden frame at the bottom holds the ground glass or plate-holder. There is also a nickle plated tripod in a bamboo cane, furnished with a device for attachment to the wooden frame. The hat must be made for the special purpose, as it must necessarily have the desired depth corresponding to the focus of the lens, which is fixed. The image is $3\frac{1}{2} \times 4\frac{1}{2}$ in.—*Le Moniteur de la Photographie*.

The Opera Glass as an Aid in Posing.

BY W. E. PARTRIDGE.

AT the time of Mr. H. T. Anthony's death I was, at his suggestion, experimenting with opera glasses in order to determine their value as aids to the operator in lighting and posing a subject. Mr. Falk, in his letter to the editor, gives some particulars in regard to the experiments conducted by himself and Mr. Anthony, and it may be interesting to put on record some further details. The idea is a very simple one, and it seems strange that it has never been put in practice before. It consists in using an opera glass or small telescope of the Galilean form with which to observe the subject and study the effects of the light and shade.

Early in the season the idea occurred to Mr. Anthony that by the use of an opera glass the work of posing might be greatly facilitated. He was at that time travelling and no opportunity for making the experiment occurred until he reached Richfield Springs, where he at once put his ideas into practice, and made several sittings with the opera glass as an aid in the posing. The results were so successful that he left the glass which he was then using with the gentleman in whose gallery he made the experiments, and on his return to New York began a new set of experiments. I complied with his desire to have me do likewise, and my first experiment was made with some misgivings and under many difficulties. Not having at the moment an opera glass at hand, a simple child's telescope was employed in its place, the lenses being the same as those in the opera glass. The success was quite remarkable; a portrait then made was so far in advance of anything I had previously obtained under the same light that I was almost ready to believe the result was due to accident. It was not until repeated trials had shown the value of the glasses for this work that I became thoroughly convinced.

Since making this experiment the idea

has been canvassed by several practical men, and all of them bear the same testimony as did Mr. Falk in regard to the superiority of the view of the model thus obtained. It is not easy to see how or why such a marked improvement should be possible by such simple means; probably the first and most important factor is, that the operator sees his subject with the same amount of light as is received by the ground glass, the opera glass apparently cutting off about the same quantity of light as the lenses of the camera do from the plate. The result of this is that the eye does not penetrate more deeply into the shadows than does the camera itself. This is a material advantage, especially to the amateur who has not trained his eye to seek for the modified shadows necessary for a good picture.

The second point, which is very nearly as important as the first, is that the picture is seen erect. This is so great an advantage that many practical men have incurred the expense of altering their cameras in such a way as to give them erect images on a ground glass placed at the top of the instrument. In spite of all that may be said in regard to becoming accustomed to seeing an inverted image, it is impossible for anyone, even by long experience, to preserve the relationship in an inverted picture quite as well as in one that is erect. For the beginner, therefore, the ability to judge of his picture precisely as it is, and not inverted as it is seen on the ground glass, is an immense advantage.

Another advantage which Mr. Anthony, on account of failing eyesight, found to be very great was the power to adjust the opera glass so as to make the view of the subject perfect. Indeed it was this which first suggested to him the possibility of using the opera glass as an aid. Many persons who cannot, or who do not wear eye-glasses or spectacles find that their vision is greatly aided at comparatively short distances by the use of glasses, and to these persons the opera glass is especially beneficial.

The opera glass cuts off all extraneous

light, and the eye has only the picture itself to view; hence its rotundity or want of rotundity is brought very clearly to the eye. It can hardly be said to be exaggerated, but it is certainly emphasized very much. This can be proved by making a sitting and then viewing the subject through a cone of paper which shall cut off the outside light.

The method of using is exceedingly simple. The subject is posed, the proper position of the ground glass secured, and then the light is examined through the opera glass looking directly over the top of the instrument. If the instrument be a considerable distance from the sitter one may stand directly in front of the lens, thus giving a perfect view looking over the camera, of course making the point of view slightly higher than that of the camera itself.

It is to be hoped that this invention or discovery, which was the last that occupied Mr. Anthony's attention before his death, will receive careful investigation, especially at the hands of the amateurs. Professionals can hardly be expected to pay much attention to it, since most of them have so thoroughly mastered the lighting of their respective galleries that they make a pose almost mechanically. Still even an operator, when he goes into a new gallery, may find the device useful, until he has mastered the peculiarities of the new light.

Notes on Silver Printing.

BY W. K. BURTON.

I HAVE to thank Mr. Dunmore for his kindness in telling me how to observe when the chloride of silver has been removed by fixing from albumenized paper. Certainly it was new to me.

I am well aware that albumenized paper, when it is sensitized, becomes impregnated with chloride of silver through the whole of its thickness; but, even at this, the film is a very thin one compared to what we are accustomed to have, for example, in a gelatine plate. The film is comparatively thin, and the quantity of haloid silver salt contained in it is comparatively *very* small. I imagine that if we deduct the free silver

nitrate there is not in a given area of albumenized paper more than an eighth part as much silver as there is in the same area of film on a gelatine dry plate. The thin film comparatively weak in silver is, moreover, porous, and of such a nature that it can be attacked by the fixing solution from both sides; whereas a gelatine film may only be attacked from one side.

Taking all this into consideration, we might very naturally assume that a silver print would be fixed in a very much shorter space of time than would a gelatine plate; yet we should be astonished to find gelatine plates—at least such as did not contain a large quantity of iodide of silver in the film—requiring anything like the time to fix that we usually give silver prints in the hypo. bath. Moreover, if I have observed properly the instructions which Mr. Dunmore gives for determining, by ocular observation, when a print is fixed—when, that is, the chloride of silver has been dissolved out of it—a very few seconds suffice.

However, I should be far from wishing to advocate that a shorter time be allowed to silver prints in the fixing bath than is usually given. To wait a quarter of an hour or twenty minutes is no great hardship; but it seems to me that we might, with advantage, use a much weaker fixing bath for our prints than we commonly do. I find that the quantity of hyposulphite usually advocated for fixing prints is from two and a-half to five ounces per pint. With the latter quantity I have frequently found the tone to be degraded, and even with the former, weak prints—which, it is true, should not exist, but which, nevertheless, sometimes do—often lose something.

I am quite aware that a *very* weak solution of hyposulphite of soda used for fixing may produce an insoluble hyposulphite of silver and sodium which may be dangerous to the permanency of prints, but I do not think it is likely that any solution used in practice will be weak enough for this.

Mr. W. M. Ayres, who is well known as a most skillful printer, and against whose prints want of permanence is the last thing

that could be urged, has frequently told me that he never uses a fixing bath stronger than one ounce of hypo. to the pint. It seems to me that if there is no danger in using so weak a bath it is a great advantage to do so, if for no other reason than that it reduces the likelihood of there remaining any hypo. in the prints after washing.

We are commonly told that hyposulphite of soda is very soluble in water, but that it clings with great pertinacity to paper, and that from this fact arises the necessity for giving prints so long a washing after fixing. As a matter of fact, I do not believe that hyposulphite of soda clings with more pertinacity to paper than do many other chemicals—for example, nitrate of silver. I wonder how many photographers have tried how much washing it requires to remove the last trace of silver nitrate from paper. I have been astonished myself at the length of time required. I am convinced that the washing usually given to prints after fixing would not be sufficient were it given to them before toning to remove every trace of silver nitrate.

It is most difficult to wash all the free silver out of prints, and it is, moreover, not a very easy thing to reduce all the free silver nitrate to chloride by the action of a weak solution of common salt, such as many photographers use before toning. I was under the impression until lately that the result of treating untuned prints with a weak solution of common salt was to get rid of *all* the silver nitrate. I found this not to be the case, however, as the following experience will prove.

I had occasion recently to tone and fix half a quire of paper in the form of prints. I wished to wash out the greater portion of the silver nitrate; and, for this reason, having no large tub available for washing, I proceeded in the following manner: The prints were placed in a large, flat dish filled with water. The water was drained off and fresh was supplied. The prints were then removed, one by one, to a second dish of fresh water, and when they were all there the water was drained from this second dish. The operation was repeatedly

performed. It will be evident that an excellent test for the complete removal of the silver nitrate is to be found by catching the last small quantity of the water drained off the prints, and observing if there be any milkiness in it or not.

The first washing was continued for an hour. The prints were then soaked for five minutes in a salt solution containing one ounce of salt per gallon. They were kept in constant motion during the soaking. They were then washed in the manner already described for half an hour to remove the salt. Even at the end of this washing there were distant traces of silver in the drainings of the prints. Toning was, however, gone on with. The time taken for the color to change was very long, which, I think (as the solution was not cold), indicated that there was much less free silver in the paper than there usually is when the toning process is commenced. After toning, half an hour more washing was given to get rid of the toning solution. At the end of the last washing there were still traces of silver nitrate remaining in the paper. Be it observed that this experiment was made with ready-sensitized paper, in which the quantity of free silver nitrate is even initially very small.

Certainly, if hyposulphite of soda adhere to paper with even as much persistence as nitrate of silver does, and if it be the case that the presence of a small quantity of hypo. in a print means want of permanence, we may hail with pleasure the idea of using less of it, and, therefore, of having less to wash out.

Concerning a solution of salt: I may say that with one considerably stronger than that mentioned the decomposition of the silver nitrate appears to be complete in a very short time. After treating prints with a solution of salt, containing an ounce to the pint, for three minutes, all free silver nitrate seemed to have disappeared, and the prints refused to tone *at all*. Is it not possibly the case that a *little* free silver nitrate is necessary to the toning process? I think it will be found that without any prints will altogether refuse to tone.

I believe the action of a toning solution is not at all understood yet. We are told that it consists in covering the metallic silver forming the image with a thin film of gold—in gilding it, in fact. If this be so, how is it that no change of color takes place when a mass of silver—say a silver spoon—is placed in a toning bath, even if the spoon be first dipped in silver nitrate solution?—*British Journal of Photography*.

Transparencies.*

BY J. PIKE.

THE subject of transparency making is a very large one, and to treat it thoroughly—that is, by a description of all the various known processes—would take up not one evening, but three or four. However, I think we may limit ourselves to two or three processes, and consider—1st, the carbon method; 2nd, the collodion, wet and dry; and, 3rd, the gelatino-chloride.

Those who have negatives small enough will find the carbon process by no means difficult. Briefly, a special transparency tissue is sensitized with bichromate of potash in the usual way; it is then squeegeed upon a piece of very clean collodionized glass. When dry (which process must take place in the dark) it is peeled off, cut into the proper sizes, and exposed under the negative. The usual circular, dome-shaped, cushion, or square masks, serve very well for the “safe edge” always used in carbon printing. The exposure is rather longer than that given for prints. The exposed tissue is then immersed in water until it softens, squeegeed on to a piece of very clear and clean glass, and developed as for prints. Plenty of time should be taken over this operation, and the water used should not be too hot. Carbon transparencies may be intensified by pouring over the still wet film a solution of pyrogalllic acid, followed, after slight washing, by a solution of sulphate of iron.

Wet collodion I have not tried, but I am told that, provided the “bath” be in good condition and ordinary care used, there is nothing to prevent anyone from achieving success in this direction. A “bath” may be purchased ready made and in the best condition. The collodion rather old and high colored is preferred, as it works cleaner. Mr. Hedley Robinson, whose paper on *Transparencies* will be remembered by most of us, recommends that the “bath” be decidedly acid, and suggests as a developer a solution containing—

Ammonio-sulphate of iron,	15 grains.
G lacial acetic acid,	½ dram.
Lump sugar,	15 grains.
Water,	1 ounce.

The older the solution the better. Mr. Robinson also recommends as a toning solution—

Ferridcyanide of potassium,	2 grains.
Nitrate of uranium,	2 “
Chloride of gold,	1/10 grain.
Water,	1 ounce.

which, he says, gives a color nearly approaching that of a Woodbury slide.

Dry collodion plates will probably be used by some of us. In this case, doubtless, the Beechey emulsion plates will be generally preferred. Their advantages have been summed up by Mr. Robinson as follows: “Considerable latitude of exposure, good color of image, perfect control of density, and comfort in developing. They bear forcing with ammonia, and are not easily fogged.” The emulsion can be bought ready made, all that is then necessary being to coat properly cleaned and prepared glass plates.

Good results have been obtained on gelatino-bromide plates. I have one or two samples of work on ordinary gelatine plates, but there is great risk of veil and fog. The ferrous oxalate developer gives about the best results, and the proportion of oxalate of potash solution to that of iron sulphate should be increased slightly, using bromide.

We are now able to get gelatino-chloride plates, and with these we can do all that we require without much difficulty. They are

* A communication to the Newcastle-on-Tyne and Northern Counties' Photographic Association.

rather slow. If printing by contact five minutes, twelve inches distant from an ordinary fishtail gas jet, is not more than enough for a negative of ordinary density. I will show later on a few negatives of varying density, and exhibit transparencies taken from these on gelatino-chloride plates. This will give some idea of the exposure requisite. The developer I succeed best with is one containing carbonate of ammonia, citric acid, and a solution of sulphate of iron. This is Cowan's second formula. The plate should be fully exposed, and the development must not be prolonged. A variety of tones are produced by varying the developers, three of which are given.

I find them very slow when taking transparencies through the camera in daylight, ten minutes being the shortest exposure with a rather thin negative. This was, however, in very dull weather. The lens used was a six-inch Ross' symmetrical, full aperture, the transparency being made from a whole-plate negative. Care must be taken in mixing the developer. The iron solution should always be added to the potash or ammonia solution. I use as a clearing solution a mixture containing one ounce of alum and one ounce of citric acid to one pint of water. The developer may be used for several plates, and the same amount of density may be had with the last plate as the first.—*British Journal of Photography*

READERS of Professor Tyndall's *Forms of Water* will be familiar with the fact of the gradual flow of the huge glaciers, "the sea of ice," etc., with his modes of measurement for proving the existence of the flow. To achieve the same object Professor Simony has recently taken a large number of photographs of the summit of the Hohe Dachstein, of the Gosan Glacier, and the Karls icefield, in order to execute future measurements. The plan is certainly excellent, and will enable the more laborious part of the work to be performed in the study, instead of upon the face of the ice with the mercury of the thermometer almost out of sight.—*British Journal of Photography*.

Gun Cotton and Papyroxyline: The Question of Permanence.*

BY JOHN SPILLER, F.C.S.

IN overhauling my collection of chemical preparations lately, I came upon a small box containing a number of specimens of gun cotton separately wrapped in paper and labelled both as to quality and date. As their history was known to me, and mode of preparation recorded, I naturally anticipated much interest in their examination after a lapse of twenty-one years; for although Sir Frederick Abel has treated of this subject almost exhaustively in his several communications to the Royal Society, it is seldom that a chemist gets the chance of experimenting for himself upon such ancient samples as those herein referred to; in fact, it is not usual to keep these articles in store for so long a period.

The specimens in question, six in number, were labelled as follows:

1. Gun cotton, highly explosive and insoluble. April 10th, 1862.
2. Gun cotton, treated with chlorate of potash. (Same date.)
3. Collodion cotton, perfectly soluble. 1862. Hadow's formula.
4. Gun cotton and paper. (No date, but certainly very old).
5. Dr. Liesegang's papyroxyline. April, 1869.
6. Mr. Daniel Spill's low-nitrated cotton pulp, as used for the manufacture of xylo-nite. 1870.

Besides these, I found another sample of highly explosive gun cotton, without label or date, contained in a wide-mouthed bottle, which I remember as having been in my possession for a great many years. This bottle was closed with a cork of rather coarse texture, and therefore not hermetically sealed from contact with air. And, lastly, I have still by me some specimens of Abel's gun cotton yarn and pulp, which Mr. E. O. Brown, of Woolwich Arsenal,

* A communication to the Photographic Society of Great Britain.

gave me in April, 1869, after delivering his lecture (at the Conduit Street Gallery) *On the Manufacture, Properties, and Military Applications of Gun Cotton*. In regard to these last-named specimens I may remark that they are not photographic qualities, but more highly nitrated compounds, suitable for blasting and military purposes, and, beyond becoming very faintly acid by keeping, have not sensibly changed; they are all still very highly explosive.

Speaking now of the contents of the box, I found, on opening it, that the wrapping papers and string were very tender, and that the ultramarine in those papers which had once been blue was almost entirely discharged or bleached, as though by acid vapors, and, on testing with blue litmus, the wrappers and their contents were now in most cases distinctly acid. Dr. Liesegang's papyroxyline and Hadow's soluble cotton were, however, very well preserved, and the gun cotton impregnated with chlorate of potash had not appreciably suffered, being still very highly explosive. Spill's preparations, perhaps from not having been so perfectly washed, had completely rotted the papers, so that they fell to pieces on the slightest touch. On firing portions of the two specimens, they burn now (as originally) with a carbonaceous residue—one, the finer sort, burning off much more quickly than the other. Both of these were found to contain free sulphuric acid, but no oxalic acid, as a product of their decomposition. The mode of manufacture was described in vol. xv., page 42, of the *Photographic Journal*; and these specimens were shown at the meeting of the Society in December, 1870.

With respect to No. 1 specimen—"gun cotton highly explosive and insoluble"—which was contained in a blue-wave official envelope, the paper was bleached in parts, denoting some slight escape of acid fumes; but the material remains apparently as explosive as ever, is still quite insoluble in ether and alcohol, and in all respects seems practically unaffected at the end of a period of twenty-one years. This result I believe to be partly attributable to its position at

the top of the box, where it found enough air to allow of the easy escape of acid vapors by diffusion. No oxalic acid could be detected on drenching this sample of gun cotton with pure water, only a minute trace of soluble sulphate being found in the aqueous solution.

Specimen No. 2—"gun cotton treated with chlorate of potash"—was not acid, and, as already stated, was apparently as explosive as ever. It likewise had withstood the action of time for twenty years.

Soluble cotton, No. 3, made by Hadow's formula, is still perfectly soluble in a mixture of ether and alcohol, giving a good tough film, and making excellent photographic collodion. Neither in this nor in Dr. Liesegang's papyroxyline can I find the slightest evidence of change, although prepared as long ago as twenty one and fourteen years respectively.

From these observations I think it may fairly be inferred that well-washed gun cotton or pyroxyline can be preserved indefinitely, if screened from sunshine, and left open to moderate access of air; but, on the other hand, we know from professor Abel's experiments, that if heated beyond the normal temperature of the air, or enclosed in perfectly air-tight vessels with ever so small a trace of free acid, there is danger of a destructive decomposition being set up, with the chance, in extreme cases, of a spontaneous explosion. No one doubts the permanence of collodion films (apart from the question of cracked varnish), when once properly fixed and washed as in photographic negatives.—*British Journal of Photography*.

WE are sorry to learn that an old friend and acquaintance, Mr. L. T. Sparhawk of West Randolph, Vt., lost his house, engine and machinery, in the most destructive fire that ever occurred in that village, on Monday, December 8. Mr. Sparhawk was fortunate, however, in saving a large quantity of coal and most of his photographic materials. The loss is estimated at \$4,000, partially covered by insurance.

Magic Lantern Transparencies.

To the EDITORS of the *British Journal of Photography*.

GENTLEMEN: As I have experienced considerable disappointment in the results obtained in my experiments with transparencies on gelatine plates, I hasten to give corroborative testimony to all that one of your contributors has said in favor of the use of common washing soda in the developer.

Having placed one of Eder's German plates in contact with a fairly plucky negative, I gave it an exposure of six seconds to an ordinary gas burner at a distance of about four feet from the jet, and then immersed the plate in a dish containing about three ounces from the following stock solution:

Washing soda,	1 ounce.
Water,	10 ounces.
Bromide of potassium,	8 grains.

For each ounce of this solution I added one grain of dry pyro. When development was completed I rinsed and fixed as usual, and after a further operation of the same kind I placed the quarter-plate in the following clearing solution:

Alum,	1 ounce.
Citric acid,	1 "
Sulphate of iron,	3 ounces.
Water,	20 "

When I removed it from the dish, judge of my delight to find as clear and sparkling a transparency as I could possibly wish to see—quite as plucky and brilliant as any I have ever seen from those of the plates now in the market advertised as a specialty for transparency work.

This is a formula the credit of which is entirely due to Mr. H. Norwood Atkins. I am, yours, etc.,

H. VICTOR MACDONA, M.A.

The Vicarage, Cheadle-Hulme, Stockport.

AN oscillating dish for developing, and kept in motion by clock-work is one of the latest French novelties. The same thing has already been patented in this country.

The Measurement of Exposures.

WE lately received an inquiry from a correspondent in France as to the best mode of ascertaining the duration of exposure when a guillotine shutter was employed: and seeing that, during the present year and its predecessor, the ranks of photography have been recruited by such large numbers of amateurs, it may serve a good purpose if we briefly allude to some of the methods that have been proposed for measuring the times of exposures, the subject having been rather fully treated on various occasions anterior to this period.

At the outset it may be said that the guillotine shutter offers the greatest facilities of any for obtaining the required data, seeing that, theoretically, a simple calculation without the employment of any apparatus will furnish the desired information, the laws of falling bodies being so simple and easily understood. Such a shutter, however, unless made in a manner more nearly approaching perfection than has yet been done, does not in practice move with the rapidity of perfectly free bodies, and, in consequence, the dictates of theory have to be modified by the logic of facts as indicated by practice. Nevertheless, for comparatively small distances, when the motion is not very quick, it is quite possible by mere calculation to learn the time occupied by the shutter in falling a certain distance.

The shape of the aperture also governs the time the plate is subjected to the action of the light, seeing that it varies from the proportion of a true square to that of an extremely elongated rectangle; hence any rates of rapidity given must be corrected by finding a mean of the times occupied in passing the lens by the upper and lower edge of the aperture.

Di-regarding, as we may safely do for short distances, the resistance of the air, and for the nonce leaving aside the frictional retardation we have alluded to, we may say, in round numbers that in a second of time any body falls through sixteen feet of space. At the expiration of that time it would be moving at such a rate as, if continued

neither checked nor increased, would be thirty-two feet per second; but in a body falling we know the motion is continually being accelerated. Drop shutters, however, do not fall through such spaces as these, and we may deal with small distances.

But the acceleration continues from the very moment that the shutter begins to drop, so that it would be quite wrong to assume that, because a second of time is occupied by an object in falling sixteen feet, it will fall eight feet in half a second, or four feet in a quarter of a second, and so on, for such is not the case. Of any two consecutive equal periods of time taken during the falling the distance traversed is always greater in the latter. It is thus obvious that to ascertain the time of exposure from the distance fallen through, or *vice versa*, is not the simple piece of division that at first might be imagined. Still the

actual calculation is easily performed, as the ratio is a simple one.

Thus, if we know how far a body falls in one second, for example, we get the distance traversed in a certain number of seconds by squaring that number and multiplying the result by the given distance. Thus, a body will fall, as we have said, about sixteen feet in one second; therefore, in three seconds it will fall not three times sixteen feet, but sixteen multiplied by three times three, or one hundred and forty four feet, and so on. The same rule holds good for smaller periods than one second. To give a practical character to these remarks, and to save trouble in calculation, we here reproduce a table given in a leading article in this journal a number of years ago, showing the space fallen through by a freely moving body in each tenth of a second up to one second:

In $\frac{1}{10}$ of a second the object will fall through $\frac{1}{25}$ foot.				
" $\frac{2}{10}$	"	"	"	$\frac{16}{25}$ "
" $\frac{3}{10}$	"	"	"	$1\frac{1}{5}$ "
" $\frac{4}{10}$	"	"	"	$2\frac{14}{25}$ feet.
" $\frac{5}{10}$	"	"	"	4 "
" $\frac{6}{10}$	"	"	"	$5\frac{16}{25}$ "
" $\frac{7}{10}$	"	"	"	$7\frac{11}{25}$ "
" $\frac{8}{10}$	"	"	"	$10\frac{24}{25}$ "
" $\frac{9}{10}$	"	"	"	$12\frac{14}{25}$ "
" $\frac{10}{10}$, or one second	"	"	"	16 "

Smaller distances than $\frac{1}{25}$ of a foot—that is, less than two inches—are not likely to be made use of, increased rapidity being gained by a spring, in which case other means for ascertaining its rates would need to be made use of. It has been proposed to photograph a falling weight, but when spaces of a few inches only were in question it may be readily seen that micrometer measures would be required, and these would be undesirable for popular use.

Most of the other methods proposed involve the photographing of moving bodies, and vary as regards the construction of the moving arrangements and the manner of recording them. One general principle runs through the multitude of plans proposed—that is, a brightly illuminated object moves in a circumscribed path, and is photograph

ed at some stage of its career. The image shown on the plates after exposure and development—whether in the form of a circular arc or a straight line—shows the extent of path traversed during exposure, either with or without calculation. Among the objects recommended are a moving pendulum, its length enabling exact calculations to be made; a hand moved by special clock-work round a dial; the swing of a metronome; a revolving opaque disc, with an aperture through which light passes to the lens; and a handkerchief held at arm's length by an assistant, and moved quickly in circles, a little practice enabling him to do this with a fair approach to accuracy.

Finally: we may name one most ingenious method by means of a vibrating fork. The shutter is blackened by camphor

smoke, and while it is falling a hair attached to a tuning fork touches it and thus records the vibrations, which are readily calculated and converted into time measurements.

We may caution those who attempt to carry out any of these ingenious experiments that they usually give equal value to any particular period of the exposure, if it be divided into a number of equal periods, although the moment when a drop shutter is opening, as also that of closing, is of far less value than the central periods. This, however, forms matter for investigation of another class and we believe that the query of our correspondent is fully answered, at the same time that a brief *résumé* of interesting matter is given to our readers in general.—*British Journal of Photography*.

Exposition Jottings.

[FROM OUR NEW ORLEANS CORRESPONDENT]

NEW ORLEANS, NOV 27, 1884.

MESSRS. ANTHONY & CO.:

Your letter by the type-writer reminds me of a story here. An old planter wrote to inquire about exhibiting prize pigs. He was answered by the type-writer, and replied indignantly, "you need not take the trouble to print the letters out for me, Thank goodness; I can read writin'!" By-the-by, that same type-writer is said to be the most rapid in the world; she can actually print more words than she can speak in the same time—almost incredible, the sex is so conversationally gifted.

As the time draws near evidence accumulates that the Exposition will be ready on opening day; exhibits are coming in by scores of car loads. Hundreds of strangers appear on the ground and in the streets. The buildings are thronged with workmen preparing for exhibitors. The grounds have been closed against the public. The decks are cleared for action and "every man is expected to do his duty" by being ready on time. There will be a brilliant scene at the reception of President Arthur and his train of dignitaries; and his welcome will be the occasion for an outburst of good feeling over the late triumph of

Southern principles, with which he is supposed to sympathize.

The management is making great efforts to be all ready for the opening, and the whole city is eagerly and hopefully looking for it. There is at present one universal complaint of dull business in every branch of trade, except those who cater to the immediate needs of the Exposition. In photography there is absolute stagnation, the like of which was never known here before at this season; some are making spasmodic efforts to stimulate business by lowering prices, but the majority are waiting hopefully, although impatiently, for the expected revival after the opening, when they seem confident of good business the rest of the season, short here at best. The Messrs. Lilienthal, of carbon fame, have lately opened a fine ground-floor gallery, going up to the skylight by elevator. They have secured the services of Mr. Kreuger, an operator well known in New York, and exhibit some excellent pictures in evidence of his skill. The Washburn Brothers have a fine gallery, and are making good work. Mr. Sonby follows close in rank, and a Mr. Moses has a good light and good pictures in his case. Many of the faces accord with his name, and show that his patrons are largely from a special class—good subjects for photographs, as they have dark eyes and hair and no freckles. There is a tendency among the photographers here towards hardness; black and white. It is in deference, I suppose, to the feeling that prevails in Southern countries having colored people, that white folks want white pictures. Some carry this deference to the extreme. A new photographer here, Mr. Winters, of German birth makes softer negatives with more delicacy and detail than most of the others.

Mr. Edward L. Wilson has been awarded the photographic work of the Exposition, and with characteristic energy is putting his large space in working order, using the valuable experience acquired at the Philadelphia Centennial. His department pushed by his efficient manager, Mr. Croughton, looks more like being ready in time than

any other part of the building. Mr. Wilson has also been appointed Special Director of the Photographic Exhibit, and seems determined to make it a success commensurate with the occasion. It is the first great opportunity since dry plate work came in, and will doubtless be improved accordingly.

A continuous exhibit of six months, to be seen by people from every section of the Union, is worth some exertion. Compared to this such an exhibition as that at Cincinnati, so far as it will influence the public, would be as the light of a transient firefly compared to a day of sunshine.

Among Northern photographers there is always a dull season just after the holidays, which they cannot better improve than by a visit to semi-tropical New Orleans, and see gathered, in the Great Exposition, the beneficent outcome of inventive genius, and the noble results of human efforts in art and industry, together with the most rare and curious natural products from every quarter of the globe. No more pleasant and profitable holiday can ever be taken. Come, Brother Photos., and store your memory and imagination with something pleasant to dwell upon for the rest of your lives.

"WANTED, a photograph!" Any photographer who can obtain a photograph of the latest addition to our knowledge of natural history would be sure of an immense sale for his picture. He will have no further to go than a small island on the river Amazon, and the object to be photographed is a small bird called a "gipsy" by the inhabitants, but whose claim to fame rests not upon its name but upon its possession during the early period of its existence of four feet. The fact that monotremes were oviparous with mesoblastic ovum was considered to be the most important intelligence ever sent by Eastern cable; but this fact, if fact it be, of a four-footed bird is still more wonderful. Who will produce the first photograph?—*British Journal of Photography*.

Elementary Chemistry and Its Application to Photography.

BY P. C. DUCHOCHOIS.

CHEMISTRY has for its object to describe the nature and properties of bodies, the elements of which they are formed, their various transformations when they act on each other, and the laws governing the combinations of the elements.

A body is an agglomeration of material particles characterized by weights. The weight varies according to the state of the bodies; it is feeble in the gases, greater in the liquids, and more so still in the solids.

The bodies are divided into two classes: 1. The elements or simple bodies; 2. The compounds.

An *element* is a substance from which in the state of our knowledge it is impossible to separate any other of a different nature; thus: iodine, carbon and silver are simple bodies, because in whatever manner they are treated one only obtains substances possessing the same properties.

The *Compounds* are formed by the union of several elements, which can be separated by known means. Chloride of gold submitted to the action of heat is decomposed into its constituent elements, chlorine and gold.

An elementary body consists of an aggregate of particles the atoms of which are the smallest component parts of matter.

The atoms are indestructible and indivisible; for that which is supposed to be a whole, without parts, is impenetrable and incapable of division.

In combination the atoms of heterogeneous elements unite to form compound atoms, which are called molecules. A *molecule* is therefore the smallest particle of compounds and reducible. For example, the molecule of common salt is formed of one atom of chlorine united to one atom of sodium, and the molecule of nitrate of silver is formed of one atom each of silver and nitrogen and three atoms of oxygen.

The force which in bodies keeps the ultimate particles together is the force of at-

traction, which in chemistry is designated under the names of cohesion or of affinity, according to the mode of action by which it manifests itself.

Cohesion is the molecular attraction which binds the atoms or the molecules and maintains them in that state of homogeneity which constitutes the bodies. It acts proportionally to the mass or weight, and is therefore very great in the solids, less so in the liquids and null in the gases.

Affinity is the attractive force which causes heterogeneous atoms to unite and form a molecule. In other words, the cohesion is the *physical force* which keeps together the atoms or molecules of the mass, while the affinity is the *chemical force* which effects the combinations of substances of different nature.

A *chemical combination* is the union of two substances resulting in the formation of a third one characterized by properties differing from those of the components, thus—nitric acid is a very corrosive liquid, soda a caustic substance disorganizing organic matters; in combining they form sodium chloride, table salt, whose useful and harmless properties are known to everyone.

The chemical combinations are often effected by the sole force of affinity, especially if one of the substances is liquid; but in many cases the cohesion being stronger, it is necessary to resort to the influence of heat to promote the affinity. For example, iodine and zinc combine at once when placed in contact; but sulphur and copper should be heated to effect their union, which is then produced with evolution of heat and light.

In solutions the bodies suffer no alteration; they dissolve without giving rise to an increase of temperature. Whenever in dissolving a substance heat is evolved there is a combination, the substance combining with a part of the water to form an hydrate; thus: sulphuric acid when poured in water combines with it, and an increase of temperature is at once observed; but nitrate of silver dissolves in water without being altered in its composition, and instead

of heat cold is produced from the absorption of the heat of the water by the nitrate while passing from the solid to the liquid state.

A *decomposition* proceeds from a chemical action, and results in the formation of new compounds. The decomposition is simple when the substance is decomposed by an element—or a compound acting as such—and one of the constituents set free. Iron decomposes water in uniting with the oxygen, and the hydrogen is evolved. The decomposition is named *double decomposition* when two new compounds are formed, as in the reaction of sodium bromide on silver nitrate, silver bromide and sodium nitrate being formed.

The *dissociation*, or decomposition, of a compound into its elements is a physical action resulting from the influence of the natural forces of heat, light and electricity; thus: the oxide of mercury submitted to the influence of heat is resolved into oxygen and mercury; chloride of silver exposed to light is reduced to chlorine and metallic silver; water under the influence of electricity is decomposed into oxygen and hydrogen.

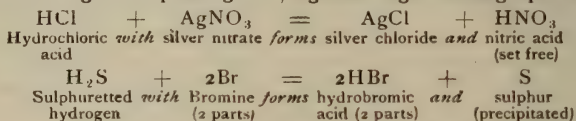
Certain compounds formed by the combination of oxygen possess the property of turning blue litmus paper red; they are called *acids*. Others restore the blue color of the litmus paper reddened by acids; they are called *bases*. If these two classes of compounds are mixed so that one neutralizes the other, a combination takes place, and the result is a *salt* which, although chemically neutral, may act however on the blue or red test paper; thus: sulphurous acid forms with soda a salt, the sodium sulphite, which possesses an alkaline reaction, that is to say, it turns the red litmus paper blue; alumina and sulphuric acid form a salt which reddens the blue paper.

By salts we not only designate the compounds resulting from the reaction of acids with bases, but also the binary compounds formed by the elements, hydrogen and oxygen excepted; such are cadmium bromide, sodium chloride, iron iodide, etc.

The acids and bases are also considered as possessing a base, but in this case the term *radical* is substituted for that of base; bromide is the radical of hydrobromic acid; nitrogen that of ammonia.

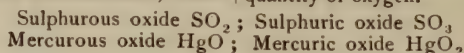
Chemical Notation.

The chemical notation is due to Berzelius, who first had the idea of representing the compounds by formula in which the constituents are indicated by symbols used in conjunction with figures expressing the



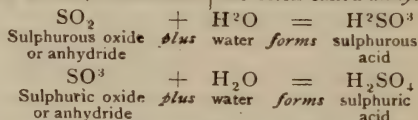
Nomenclature.

Oxygen in combining in one or several proportions with the elements forms an important class of compounds called *oxides*, whose properties differ according to the element which enters into their constitution and the amount of oxygen combined with that element. When oxygen forms but one oxide with an element, the compound is simply designated by the collective term *oxide* placed before the name of the element; but when it combines in several proportions with the same element, the various oxides are designated by a prefix indicating the number of atoms of oxygen which enters into the combinations; thus:

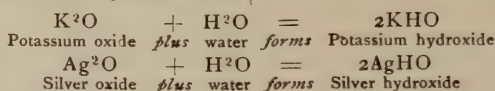


The oxides are divided in three classes:

1st. *The anhydrous oxides*, which have



2. *The basic oxides*, characterized by the property of forming salts with the acids. These oxides in combining with water form a class of compounds named *hydroxides*—or



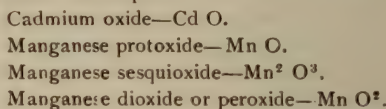
* The term *hydrate* is more properly applied to the compounds in which one or several molecules of water, H^2O , are united; such are hydrated sul-

phuric acid, hydrated calcium chloride, the hydrates of perchloride, etc.

number of atoms of each of the combined elements. The symbols are generally the first or two letters of the elements; thus: H stands for hydrogen, O for oxygen, N for nitrogen; H_2O , the formula of water express that two atoms of hydrogen are united to one of oxygen; HNO_3 , nitric acid, that one atom of hydrogen is united to one of nitrogen and three of oxygen.

The reactions which take place in combinations are indicated in the formulæ by algebraic signs forming equations:

the first oxide—that containing the least oxygen—is named *protoxide* or *monoxide*; the second, *dioxide*. The prefix *sesqui* indicates that three atoms of oxygen are united to two atoms of the element, and the prefix *per* the most oxigenated compound of a series. Example:



When only two oxides are formed with the same element, it is usual to designate them by ending the name of the element with the termination *ous* or *ic*, the latter indicating the oxide containing the largest quantity of oxygen.

the property of forming acids when combined with the elements of water. They are often called *anhydrides*:

*hydrates**—which are to the oxides what the anhydrides are to the acids, as shown by the following examples:

The molecule H_2O combined with the radical of the hydroxides is termed *hydroxyl* or *oxydril*, and is considered as the mono-atomic residue of water, H_2O deprived of one atom of hydrogen.

The hydroxides are true bases and neutralize the acids by double decomposition. Their solutions turn the red litmus paper blue, which is characteristic.

The basic oxides of potassium, sodium, lithium, rubidium and cesium possess the most powerful properties; they are termed *alkaline oxides*. Their hydrates form the *alkalies*. The silver oxide is also distinguished by its energetic basic properties, being capable of neutralizing very weak acids.

3. *The peroxides or neutral oxides* possess no distinct acids or basic properties although capable of uniting with the acids and the alkalies. Such are the aluminium sesquioxide, the dioxide of manganese, lead, barium, etc. As a rule when a metal forms several compounds with oxygen the basic properties diminish in the proportion of

Sulphurous oxide,
Sulphuric oxide,

The prefix *hypo* (*less*) indicates that the acid contains a smaller proportion of oxygen than the acid ending with the same termination. Sulphurous acid H_2SO_3 , hyposulphurous acid $H_2S_2O_3$.

To name the hydracids the termination *ic* and the prefix *hydro* are added to the name of the metalloid, the prefix characterizing this class of acids—hydrochloric acid, hydrobromic acid, hydrosulphuric acid, hydrofluoric acid.

The hydracids are also designated by the term *hydric* placed before the name of

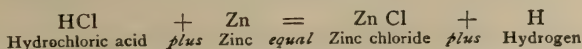
oxygen, the most oxygenated oxides being generally the anhydrides.

Acids.—According to Gerhardt's theory of the constitution of acids and salts, now adopted by chemists, the anhydrous binary compounds formed by oxygen with the metals, which formerly were considered as true acids, possess no acid property unless combined with the element of water; thus: N_2O_5 is inert, neutral, until combined with hydrogen and oxygen, and consequently an oxide of nitrogen; but when so combined it forms nitric acid, a compound represented by HNO_3 , in which hydrogen is one of the constituent elements. Therefore all the acids are considered as hydrogen compounds which have the property of reddening the blue litmus paper. The acids are divided into two classes; 1. the *ox-acids* formed, as said above, by the combination of the elements of water with the anhydrides; and, 2. the *hydracids*, which are formed by the union of hydrogen with the metalloids. The terminations *ous* and *ic* which characterize the oxides have the same signification when used with the ox-acids:

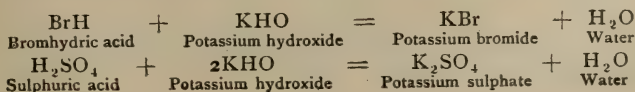
Sulphurous acid,
Sulphuric acid.

the metalloids, which then ends in *ids*: thus: hydric chloride, hydric bromide, etc.

Salts.—The salts are formed by the substitution of one or more atoms of a metal—or a compound acting as such—to a corresponding number of atoms of the hydrogen entering into the constitution of acids. For example: In the reaction of zinc with hydrochloric acid one atom of the metal takes the place of one atom of hydrogen, which is set free, the result being zinc chloride—



With the bases (metallic hydroxides) the reaction is similar, but then a double decomposition takes place and water is formed:



In the reaction represented in the last equation the molecules of potassium hydroxide are used in order that the two atoms of metal may displace the two atoms of hydrogen of the acid, which then unite to the molecules H O of the hydroxide to

form two molecules of water: $\text{H}_2 + 2 \text{H O} = 2 \text{H}_2 \text{O}$.

The salts derived from the ox-acids are called *oxy-salts*. They are named by changing the termination *ous* and *ic* of the acids from which they are obtained into *ite* and *ate*; thus:

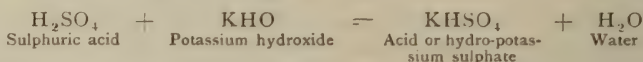
Nitrous acid and potassium give potassium nitrite.

Phosphoric acid and sodium give sodium phosphate.

Hypochlorous acid and calcium give calcium hypochlorite.

In the formation of the oxy-salts it may happen that all the hydrogen of the acid is not saturated. In this case the remainder is indicated by the prefix *hydro*—or *acid*—placed before the name of the metal. For instance, sulphuric acid and potassium form two compounds, one by the substitution of

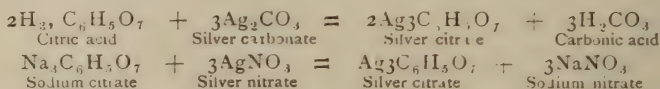
the two atoms of hydrogen by two atoms of metal, as in the example above given, and another the hydro or acid potassium sulphate, in which one atom of metal has replaced only one of the two atoms of hydrogen of sulphuric acid:



The acid potassium sulphate reddens the blue litmus paper; but there are similar salts, the acid sodium carbonate, for example, Na H C O_3 , whose solution is neutral to litmus paper. Therefore these terms *hydro* and *acid* only indicate that the basic hydrogen of the acids is not entirely saturated.*

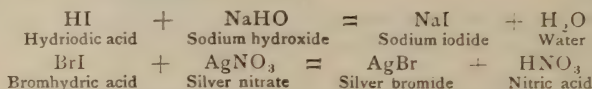
As it can be inferred by what precedes the basicity of acids depends on the number of atoms of hydrogen which can be exchanged for metallic atoms by double de-

composition. When the acid contains but one atom of hydrogen, the acid and its salts are *monobasic*—or *monoatomic*; when it contains two atoms of hydrogen, they are *dibasic*—or *diatomic*—etc. Thus nitric acid, H N O_3 , and the nitrate M N O_3 , are monobasic; sulphuric acid $\text{H}_2 \text{S O}_4$ and the sulphates $\text{M}_2 \text{S O}_4$, are dibasic; citric acid is tribasic $\text{H}_3 \text{C}_6 \text{H}_5 \text{O}_7$. The latter acid and its salts require therefore three atoms of metal to replace the three atoms of hydrogen:



The reaction of the hydracids with the bases—or compounds acting as such—always results in the constitution of a binary

compound formed by the combination of the metal with the metalloid; thus:



The name of these salts is made by adding the termination *ide* to the name of the metalloid: sodium fluoride, ammonium sul-

phide, cupric bromide Cu Br_2 , iodide trichloride, Icl_3 .

In modern chemistry the acids are defined

* The term *hydro* is now generally replaced by the full term *hydrogen*; thus the hydro-sodium sulphate is named hydrogen sodium sulphate, etc.

† In general formulæ M stands for *metal* and R for *radical*, either simple or compound.

as hydrogen salts—which are rational with their mode of formation—and the name *hydrogen nitrate*, *hydrogen sulphite*, *hydrogen hypochlorite*, etc., substituted for those of nitric acid, sulphurous acid, hypochlorous acid. The term *hydric* begins also to be generally adopted to designate the ox-acids as it does the hydracids: *hydric nitrate*, *hydric sulphite*, etc. Although this nomenclature is more scientific, the common names of acids—as well as those of the salts—will often be employed in order to be easily understood by photographers who know the chemical compounds only by the names of the old nomenclature.

Atomic Weights and Laws of Combination.

It is demonstrated by experiments that one volume of hydrogen is 35·5 times lighter than the same volume of chlorine, and that these quantities of hydrogen and chlorine combine in no other proportion, one

atom of hydrogen uniting to one atom of chlorine to constitute one molecule of hydrochloric acid. It follows that the number of atoms is the same in each volume, and that their weights are in the ratio of 1 to 35·5. These numbers represent, therefore, the *atomic weights* or *combining proportions* of hydrogen and chlorine. All the elements have likewise their atomic weight—hydrogen being taken as the unitary body—and combine also in *definite or constant proportions*; that is to say, the same compound always contains the same elements in the same proportion—thus: 1 part of hydrogen unites to 30 parts of chlorine or to 126 5 parts of iodine, and 35·5 parts of chlorine unite to 23 of sodium, or to 103 parts of silver, etc. However, it often happens that one atom of an element fixes several atoms of another; for example: nitrogen forms with oxygen five different compounds represented as follows,

Nitrogen protoxide or nitrous oxide,	$N_2O = 28N + 16O$
“ dioxide or nitric oxide,	$NO = 14N + 16O$
“ trioxide or nitrous anhydride,	$N_2O_3 = 28N + 48O$
“ tetroxide or peroxide,	$NO_2 = 14N + 32O$
“ pentoqide or nitric anhydride,	$N_2O_5 = 28N + 80O$

Here we find that the proportion of nitrogen and of oxygen, when not that of the atomic weight, is some multiple of it.

This example illustrates the *law of multiple proportions*, which states that when an element combines with another in more than one proportion, the proportions are always multiple of the atomic weight

Besides this law, and that of constant proportion above explained, there is one

relating to the combination by volume which was discovered by Gay-Lussac. It states that the gases combine in such a manner that their volumes—which are nothing but their atomic weights—are always in simple proportion, and that there exists also a simple proportion between the volume of the product of the combination and that of the uncombined gases; thus:

1 volume of chlorine and 1 vol. of hydrogen form 2 vol. of hydrochloric acid	
1 “ oxygen “ 2 “ hydrogen “ 2 “ steam (water gas)	
2 “ nitrogen “ 3 “ hydrogen “ 2 “ ammonia	
2 “ nitrogen “ 1 “ oxygen “ 2 “ nitrous oxide	
1 “ chlorine “ 2 “ oxygen “ 2 “ hypochloric oxide	

The explanation of the second proposition of Gay-Lussac's law above illustrated was given by Avogadro, who assumed that “equal volumes of all the gases, *elementary or compound*, contain the same number of *molecules*.” In the case of the combination of chlorine with hydrogen it is clear

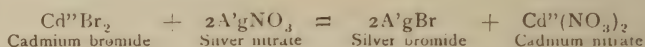
that one volume of hydrochloric acid can only be half that of the sum of the uncombined gases, since *one atom* of hydrogen unites to *one atom* of chlorine to form *one molecule* of acid, HCl. As to the formation of only two volumes of steam by two volumes of hydrogen and one of oxygen, it

should be noted that each molecule of oxygen, O_2 , must split into two halves in order that one atom of oxygen unites to a molecule of hydrogen, H_2 , to form a molecule of steam H_2O (H_2O) and, consequently that there should be twice as many molecules of steam as there are molecules of hydrogen, *i. e.*, two volumes. This train of reasoning will explain the formation of the two volumes of ammonia and of other similar cases, thus showing that whatever be the amount of volumes which enter into combination, the sum of the resulting compound is always two or a multiple of two volumes.

Atomicity.

Atomicity is the power possessed by the elements of fixing one or several atoms of hydrogen or of a similar element.

Atomicity differs from affinity in this, that the latter is the force which attracts the heterogeneous atoms and effects their combinations, while the former is the capacity of combination causing one or several atoms of the same element to unite with one atom of another element.



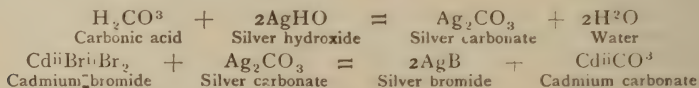
In this example the dyad cadmium is necessarily united to two atoms of bromine, and to replace it two monads of silver should be employed to saturate the bromine. In other words, to obtain silver bromide from one atomic weight of cadmium bromide, two atomic weights of silver

The degree of atomicity of the metalloids is determined by the number of hydrogen atoms these elements can hold; that of the metals proper by the number of chlorine atoms; thus, iodine, bromine, chlorine, which are capable of fixing only one atom of hydrogen, and potassium, sodium, silver, one of chlorine, are called *monad* or monatomic elements; oxygen and sulphur fix two atoms of hydrogen, and calcium, cadmium and zinc, two of chlorine; they are called *dyad* or diatomic elements. Nitrogen and gold are *triads*, or triatomic elements, etc.

The atomicity is indicated by prisms or roman numerals added to the symbols: chlorine, monad, Cl—oxygen, dyad O_2 —nitrogen, triad, N_3 —carbon, tetrad, C_4 .

The elements of the same atomicity are equivalent, that is to say, they can replace each other in combination atom for atom. On the other hand two atoms of a monad are equivalent to a dyad; three monads to a triad, two dyads, or four monads, to a tetrad, etc.

nitrate, must be employed. But if silver carbonate is substituted for silver nitrate, then only one atomic weight of the carbonate is necessary, since carbonic acid being dibasic, two atoms of silver have been exchanged for the hydrogen to form the carbonate.



The elements are divided into two classes, the metals and the metalloids or non-metals.

The metals are characterized by the property of forming bases and acids with oxygen. The metalloids do not form any bases, their combination with oxygen being either acids or neutral oxides.

The table on the next page gives the name of the elements with their atomicity and atomic weights, for future reference:

In speaking of the difficulties of obtaining accurate focus on the ground glass even with the magnifier, or on plain glass, it is suggested to fix to the middle of the ground glass a small microscopic cover glass with Canada balsam, which gives a transparent place where one can examine with the magnifier, and the remaining portion of the glass will readily show the whole subject.—*Le Moniteur de la Photographie*.—Translated for the BULLETIN by R. W.

TABLE OF
ATOMICITY AND ATOMIC WEIGHTS
OF THE ELEMENTS.

Metalloids.	ATOMIC WEIGHTS		ATOMICITY	ATOMIC WEIGHTS	
	ATOMICITY	ATOMICITY			
Arsenic.....	As ⁱⁱⁱ	75.0	Gold (<i>Aurum</i>).....	Au ⁱⁱⁱ	196.0
Boron.....	Bi ⁱ	11.0	Indium*.....	Ini ⁱⁱⁱ	113.4
Bromine.....	Bi	80.0	Iridium*.....	Iri ^v	196.7
Carbon.....	Ci ^v	12.0	Iron (<i>Ferrum</i>).....	Fe ⁱⁱ & Fe ⁱⁱⁱ	56.0
Chlorine.....	Cl ⁱ	35.5	Lanthanum*.....	La ⁱⁱⁱ	139.0
Fluorine.....	Fl ⁱ	19.0	Lead (<i>Plumbum</i>).....	Pb ⁱⁱ	206.5
Hydrogen.....	Hi	1.	Lithium.....	Li	7.0
Iodine.....	Ii	126.5	Magnesium.....	Mg ⁱⁱ	24.0
Nitrogen.....	N ⁱⁱⁱ	14.0	Manganese.....	Mn ⁱⁱ	55.0
Oxygen.....	O ⁱⁱ	16.0	Mercury (<i>Hydrargyrum</i>)	Hg ⁱ & Hg ⁱⁱ	199.0
Phosphorus.....	P ⁱⁱⁱ	31.0	Molybdenum.....	Mo ⁱⁱ	92.0
Selenium*.....	Se ⁱⁱ	78.0	Nickel.....	Ni ⁱⁱ	58.6
Silicium or Silicon.....	Si ^{iv}	28.0	Osmium*.....	Os ^v	198.6
Sulphur.....	S ⁱⁱ	32.0	Palladium*.....	Pd ⁱⁱ	106.2
Tellurium*.....	Te ⁱⁱ	128.0	Platinum.....	Pt ⁱⁱ & Pt ^{iv}	197.0
			Potassium (<i>Kalium</i>)....	Ki	39.0
			Rhodium*.....	Rh ⁱⁱ	104.0
			Rubidium*.....	Rb ⁱ	85.2
			Ruthenium.....	Ru ^{iv}	103.5
			Silver (<i>Argentum</i>).....	Ag ⁱ	108.0
			Sodium (<i>Natrium</i>).....	Na ⁱ	23.0
			Strontium.....	Sr ⁱⁱ	87.5
			Tantalum*.....	Ta ^v	182.0
			Thallium*.....	Tl ⁱ	203.6
			Thorium*.....	Th ^{iv}	231.5
			Tin (<i>Stannum</i>).....	Sn ⁱⁱ & Sn ^{iv}	118.0
			Titanium*.....	Ti ^{iv}	48.0
			Tungsten (<i>Wolfram</i>)....	W ^{iv}	184.0
			Uranium.....	Ur ⁱⁱ	120.0
			Vanadium*.....	V ⁱⁱⁱ	51.2
			Yttrium*.....	Y ⁱⁱ	93.0
			Zinc.....	Zn ⁱⁱ	65.0
			Zirconium.....	Zr ^{iv}	90.0

Coloring Matters as Optical Sensitizers.

BY DR. J. M. EDER.

I HAVE made experiments with a great number of red, green, and yellow coloring matters, in order to determine their action on gelatino-bromide films as optical sensitizers. Each of the following coloring matters was found to exercise a sensitizing action quite in accordance with the absorption spectrum obtained by the transmission of light through a dry film of gelatine colored with the dye, and all of those mentioned are sensitizers for the extreme red rays of the solar spectrum. Iodine green, bromeosine, iodeosine, erythrosine, pyrosine, aureosine, ethyleosine, methyleosine, phloxine, rose-Bengal, gyanosine, hydrochlorate of rosaniline, acetate of rosaniline, Coupiér's toluidine-red, bitter-almond-oil green, brilliant green, methyl green, picrate of methyl-green, alachyde green, Hoffman's violet, dahlia, methyl violet, Paris violet, benzyl-rosaniline violet, gentian violet B, gentian violet B R, resorcline blue, fluorescine, iodocyanine, chlor-cyanine, cyanine sulphate, cyanine nitrate, Coupiér's blue red coralline, naphthaline red.

The following gave no absorption bands, but a gradual action towards the red (often, however, scarcely recognizable): Carthamine, turmeric, hematoxyline, the same with ammonia, soluble Prussian blue, hydrochlorate of monophenylrosaniline.

Colored gelatino-chloride of silver films gave the maximum of action in the yellow, and in the same place as with a gelatino-bromide film.

I have taken photographs of oil paintings (under yellow glass) on plates prepared with the above coloring matters, and have found the color-scale of the paintings to be correctly reproduced. Such plates I call "orthochromatic" plates, as the term "isochromatic" is used to designate the special plates of Clayton, in Paris; and, moreover, the term "isochromatic" is used in quite a different sense in optics—*London Photo. News*.

Permanency of Prints.

PRINTS on albumenized paper cannot be completely fixed in Dr. Liesegang's chloride bath, as only the chloride of silver dissolves, leaving the albumenate of silver in the paper; but firm as the position of albumenized paper appears to be as a printing material, we cannot help thinking that the great advantages of the collodion chloride and the gelatino-chloride processes will become generally appreciated before long, not the least of these advantages being much greater permanency.—*London Photo. News*.

Experiments with Phosphites and Various Acids in Developers.

BY W. H. HARRISON.

THE objection to sulphite of soda in the developer, raised in these pages some time ago—that it acts as a restrainer—was experimentally refuted by the Editors, who proved that it, by itself, acts as a slow developer, which was to be expected, because all developers, including pure sulphite of soda, are absorbents of oxygen. Another reason is that it has a feebly alkaline reaction, and the presence of alkalies increases the absorption of oxygen by silver reducers. Then, again: sulphurous acid is one of the weakest of the inorganic acids. It is not much more powerful in its combinations than carbonic acid; so that there are certain resemblances between carbonate of soda and sulphite of soda—the former, however, having the stronger alkaline reaction. As sulphite of soda is a developer, how is it that a solution of it rendered slightly acid preserves pyrogallie acid? This may be because there is so very much matter in the concentrated solution to oxidize, and because the specific gravity of the liquid is such that when its upper surface is oxidized the thin film acts partially as a protecting layer upon the bulk of the liquid below. Without the sulphite the oxidized layer sinks in streams to the bottom of the so-

lution, fresh liquid takes its place, to be in turn oxidized, and so the whole mass discolors rapidly. The oxidized solution is a brownish-yellow vegetable dye.

Undoubtedly sulphite of soda slows development, which is a different thing from slowing the plate. To operators not in a hurry from commercial stress or other reasons, the lengthening of the time of development by a minute or two is an advantage rather than otherwise. The whole operation is then more under control, and it is easier to hit the proper intensity, thereby avoiding subsequent strengthening or reducing of the negative.

Wishing to know the function of acids in the sulphite of soda developer, and to what extent different acids affect the color of the image, I tried several new developers, all of which worked well. The first picture was, however, developed with the usual sulpho-pyrogallol developer, slightly acidified with citric acid in order to compare it with the others. The acidulated sulpho-pyrogallol and bromide of potassium were applied first to the film that it might obtain the benefit of the action of the free acid before the latter was neutralized by ammonia. By soaking the plate in this way for more than a minute, and brushing its surface under the liquid before the addition of the ammonia, it is easier to obtain clean, unspotted, and dense negatives. Soaking the plate with water alone before development has always had a bad effect in my experience.

The following are the new developers tried. The sulphite of soda used was the recrystallized variety; all the chemicals employed were those of Messrs. Hopkin & Williams, except the pyrogallol, which was Schering's. In all cases, of course, the acid was put in the liquid before the pyrogallol was added.

1. LACTIC ACID.

The stock solution consisted of—

Lactic acid, 60 minims.
Saturated solution of
sulphite of soda, . . 1 ounce.
Pyrogallol, 45 grains.

In this and all the succeeding experiments, before developing, one part of the stock solution was added to fifteen of water containing the bromide, and the ammonia was added after the plate had been treated in the manner already stated. The above stock solution at once took a faint, pinkish straw color.

2. BISULPHITE OF SODA.

The stock solution consisted of—

Saturated solution of bisulphite of soda, . . . 1 ounce.
Pyrogallol, 45 grains.

This salt is strongly acid to test paper; in fact it will dissolve zinc, and undergo decomposition in the process. The solution was of a feebly tinted, blackish-green color. Bisulphite of soda is much less soluble in water than the sulphite.

3. SULPHUROUS ACID AND SULPHITE OF POTASH.

Water, 1 ounce.
Sulphite of potash, . . . 2 drams.
Sulphurous acid, 1 dram.
Pyrogallol, 45 grains.

The sulphite of potash had an alkaline reaction, and the above quantity of sulphurous acid made it but slightly acid. The solution was of a dark, sage-green color.

4. CARBOLIC ACID.

Saturated solution of carbo-
lic acid in water, 1 dram.
Water, 7 drams.
Pyrogallol, 45 grains.

At the time of mixing, this solution was colorless; but it gradually took on a yellowish-brown tint, and at the end of three weeks became the color of ordinary negative varnish. Carbo-lic acid or, more properly speaking, phenol, is not an acid at all; the behavior of this developer was, therefore, unlike the others, as stated farther on.

5. PHOSPHORUS ACID.

Water, 1 ounce.
Phosphite of potash, . . 110 grains.
Pyrogallol, 45 “

The phosphite of potash had an acid re-

action of its own. The solution was a dark, sage-green color, and slightly opalescent before and after filtering. In three weeks it exhibited symptoms of slight turbidity, but was possibly only ridding itself of that which caused the opalescence.

6. PHOSPHORUS AND CITRIC ACIDS.

Water, 7 drams.

Phosphite of soda, . . . 220 grains

Solution of one dram of citric acid in eight drams of

water, 120 minims.

Pyrogallol, 45 grains.

The phosphite of soda had an acid reaction; but on adding the pyrogallol it went a dark color, so I added the above citric acid, which at once partially decolorized it. I do not now think that the addition of the citric acid was necessary; for the dark colors struck with the phosphite salts appear to be harmless, and do not show in the developer when first diluted for use. The stock developer now under notice assumed a greenish-brown color.

The general result of the trial of all these developers was to show that, with ordinary exposures, the particular acid in the developer has very little influence on the color of the image, though it has much on the color of the developer. The free acids in these developers all acted as restrainers, with the development conducted in the manner already stated. In fact, with the very acid, bisulphite of soda, No. 2 developer, more than treble the usual exposure of the plate was necessary. On the other hand, as the exposures were lengthened and the developers made more acid the vigor of the images increased, and acquired more the characteristics of those taken on chloride of silver gelatine plates. I am not sure whether by following out these principles it may not be possible to get the same class of transparencies as with chloride plates, and to avoid the long exposures to lamp-light on the one hand, or to burning magnesium on the other, as well as to avoid keeping one set of plates for transparency printing and another description of plates for the camera.

According to Miller, sulphite of potash

in solution undergoes slow decomposition in closed bottles; and a recent paragraph in these pages announced that a French chemist had stated that sulphite of soda in solution slowly decomposes. The latter paragraph may have merely meant the ordinary decomposition by oxidation; but if it meant decomposition in closed bottles the subject should receive attention. Watts says that the solutions of the phosphites alter little by exposure to air, so there is a probability of advantage in substituting them for the sulphites in developers.

These experiments proved to me that variations in the amount of free acid in the sulphite class of developers affect the results—whether more so by my method of applying the developer than by other methods I cannot say; but, as the citrates of the alkalis are powerful retarding agents, it is probable there is restraining in every case. A bad sample of sulphite of soda is a mischievous thing, because the decomposition of any free carbonate of soda in it, when citric acid is added, produces the strong restrainer, citrate of soda, in the solution; therefore the sulphite of soda should be pure and recrystallized.

In all cases litmus paper should be called into use when mixing the sulphite developer. When the solution is but just neutralized, or but faintly acid, it has much more tendency to fog the plates than if a little more acid be added. The stock developer may give a fairly strong reddening of litmus paper before the acid is in sufficient ascendency to effect retardation of practical importance; but the chances of fog are greatly diminished. Some of the discrepant experiences of various new users of the sulphite of soda developer may have been due to their following one formula, and mixing the same quantity of citric acid with different samples of sulphite of soda. The latter must be pure to be sure of good results, and the mixing should be done with the aid of the information given by test papers.

As an example of the danger of using different samples of sulphite of soda indiscriminately, it may be mentioned that while

at Lucerne I received a French sample of the salt, and did not recognize it, its appearance was so "chalky." Seven ounces of saturated solution of it were made and filtered, and having no litmus paper at my hotel I took the solution to Herr Brunck, of *Zuricherstrasse*, to be rendered very slightly acid before adding the pyrogallol. He informed me of a more delicate test than litmus paper, namely, a very weak solution of cyanine, the beautiful blue color of which is destroyed by the feeblest trace of acid in any liquid added to it. To hit this neutral point we had to put into the seven ounces of solution at least a quarter of an ounce of strong sulphuric acid, that acid being selected for the purpose of liberating a little free sulphurous acid. The quantity of carbonate of soda in the original sample of "sulphite" may therefore be imagined, and had the neutralization been performed with citric acid a heavy amount of the powerful restrainer, citrate of soda, would have been in the developer. This abundantly shows the necessity for using test papers or test solutions, and pure chemicals, in making the sulphite of soda developer. This developer works best when not quite neutral; it should have a moderately strong acid reaction. I did not find that sulphite of soda acted very strongly as a restrainer, much of it as the solution contained. Many salts, containing more oxygen than the sulphites, act as restrainers in chemical actions. An article by Mr. Hood in a back number of the *Philosophical Magazine* states that the oxidation of ferrous sulphate through chlorate of potash is retarded by the presence of the sulphates of potash, soda, ammonia, and other salts, in proportion to the weight of each inactive salt added. In photography any tendency to yield oxygen checks development, and any tendency to absorb oxygen increases the energy of development; even salts chemically inactive seem to exercise some little "strain" in either the one or the other direction.

On my notes are the following items of further information about the six developers already mentioned:

The lactic acid developer, No. 1, gave a

bright image, which came out rapidly. This acid possesses much power in the way of preventing the decolorizing to any great extent of the pyrogallol stock solution, which in three weeks has undergone no visible change. The lactic acid used was not very strong, but that known as "medicinal," specific gravity 1040.

Developer No. 2, with bisulphite of soda, was so acid that it required about three times as much ammonia as the other developers to energize it. I find the curious remark on my notes that the plate developed with it took longer than the others to fix in the thiosulphate of soda solution, but this requires verification by more experience.

The sulphite of potash developer, No. 3, presented no unusual features. The carbolic acid developer, No. 4, darkened rapidly over the plate; in short, it behaved just like the ordinary pyrogallol developer without sulphite, and the image came out quickly. No. 5, with phosphite of potash, gave a vigorous image; the diluted developer became slightly opalescent. No. 6, with phosphite of soda and much citric acid, gave one of the best transparencies of the series; but the exposure was necessarily longer than with plates for development in a less acid solution. The developer acquired a deep color—not irregularly; yet I do not think it was more decomposed than if the ordinary sulphite developer had been used. These colors of the liquids are very deceptive, and, as a rule, are harmless, forming no guide as to the relative amount of decomposition going on in various developers. The phosphite of soda developer took the color of strong old ale over the plate.

All these stock solutions work well; and, as I use them up, if they should present any peculiarities not yet observed, any such points of interest will be published.—*British Journal of Photography.*

VERY pleasant reading is a series of articles in the English journals on "where to go with the camera." Won't some of our amateurs do a similar service on this side the water. It would be quite acceptable.

Hints on Posing and the Management of the Sitter.

BY H. P. ROBINSON.

Chapter 1.—The Head.

IN the following papers I hope to give some general ideas on posing sitters for portraiture, suitable for the requirements of the professional photographer—not, I trust, without being of some use to the amateur. I do not intend to confine myself to the ornamental and elaborate, but shall prefer to give such simple advice as, in my opinion, is calculated to be of most use in ordinary studio practice. Much of it, perhaps, will seem too elementary for the skilled photographer, but I trust that here and there may crop up ideas worthy of the attention of even the most experienced operator. In doing this, I protest against the enervating practice of giving a set of poses for the imitation of those idle and thoughtless operators who do not try to think for themselves and adapt their ideas to their subjects, but who place their sitters, no matter how unsuitable it may be to them, in the same position day after day, as if the posing chair was a sort of Procrustean bed on which everybody must be cut to the same size and shape and form, and brought to that state of imbecile appearance to which photography is popularly supposed to reduce its victims. A recent writer on composition has some forcible remarks on that point. He says: "Our subjects and our treatment of them must be emphatically our own; but nevertheless, every student of art owes it to himself to get what help he can from the study of the works of the great painters who have gone before. His object should be to notice not only how natural appearances have been modified—or, as it is technically called, treated—by painters of acknowledged fame, but also why this was done. No painter who has in him any spark of originality will directly repeat any effect that has already been painted; but an earnest student can only benefit himself by trying in a measure to

look at nature from the point of view of the masters of his art."

For the purpose of these lessons, portraiture may be divided into different classes, such as the head, the three-quarter, the full-length, the seated, the standing, the group, etc. Of all this variety, the head is perhaps the most important, for nine tenths of the portraits taken in ordinary studios—excluding the lower class and "the beach"—consist of heads taken under different names, such as the vignette, the Berlin, the medallion, the Rembrandt. Now it might be thought that nothing could be simpler or easier than to pose a head, and that there was very little to say on the subject; but if we are to judge by the majority of



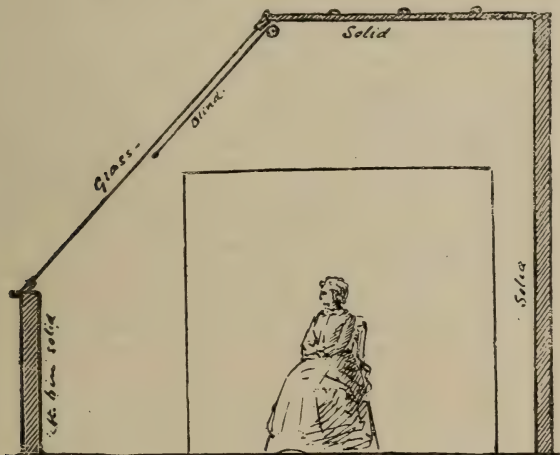
specimens, we see the art of setting a head properly on its shoulders is not given to all men, and the results suggest the notion that their victims were first hanged—*sus. per col.*—and then, instead of being "drawn" according to the old sentence, had been photographed. This broken-necked effect is more visible in Rembrandt's than in the other forms mentioned, although they are not absent from vignettes and medallions. The reason why it is more apparent in Rembrandt's, probably, is, that this kind of picture is commonly taken in profile, and the strain to turn the head sufficiently

makes it lean towards the camera. Here is an illustration. You have only to add a rope to make the thing complete.

The eye, also, in these shadow portraits, nearly always seems to be afraid of looking straight—the shy, half-frightened, and wholly deceitful glance of the eye in most of these pictures, suggesting that none but the very worst characters ever had their portraits done in this style. Both these very grave faults are easily avoided. The inclination of the head towards the camera is caused chiefly, as I have said, by the strain in turning to a side view of the face, when the body is in full front view. If the figure were turned to a three-quarter view towards the light, the strain would be lessened, and if the head still leans over too much, a very slight movement of the head by the photog-

rapher would set it upright. But I must take the opportunity that here presents itself of saying that the less the operator handles his sitter the better. It worries him, and oftener tends, except in very skilled hands, to stiffen the figure rather than add to its grace. But I still strongly advise the use of the head-rest, even for short exposures; not so much for the purpose of keeping the figure still, as for the aid it gives in posing.

The defect in the eye, just mentioned, is caused entirely by having the light too low down, so that the sitter, if he looks straight, is dazzled, and has to look aside. There is no reason whatever why there should be any light in a studio lower than five feet from the ground. A studio of the following section answers every purpose, and as the



solid walls are not less than four feet six inches high, the eye of the sitter for a Rembrandt portrait may be looking at a pleasant picture instead of a glaring light.

There is, apparently, very little glass used here, but it will be found quite enough. And if a space of clear glass measuring five feet by four feet just behind and in front of the sitter be used, the rest of the roof may be obscured, or semi-obscured, leaving the possibility, however, of letting in a little reflected light on the shadowed side of the head. The shadow pictures are very much improved if some gradation of light and

shade can be obtained in the background, and fine effects can be got by turning the face from the light, and bringing it out dark against a light background.

I have incidentally mentioned the head rest, but as an instrument of the greatest use in posing it deserves more detailed notice under the heading of these chapters.

The head rest is chiefly famous for the unmeasured abuse it meets with from the ungrateful sitters for whose benefit it was invented. They never stop to think that it is not the instrument that is in fault, but the clumsy users of it; but I notice in my

own practice that the complaints against the rest are not so frequent as they were once upon a time, and if a sitter objects to the rest, I feel certain that he has been badly treated, and had an awful experience with some other photographer, and make it a point of honor to induce him not only to submit to, but enjoy it.

The rest should not be treated as an instrument to keep the sitter still, but as a posing machine. One of the most objectionable things you can do to a sitter is to insist on his being still. You of course want him to be quiet while the exposure is going on, but this should result from your general treatment of him, rather than any preconceived notion he may have brought with him. He should be so managed that sufficient stillness is a natural result. During the few seconds' exposure that is all now necessary, a slight touch of the rest, properly applied, is enough to secure steadiness, but its great use is in making slight variations of the pose—of which, more hereafter—and the confidence it gives the sitter that he is not going to spoil your plate by moving. On the other hand, if you dispense with the rest, the sitter makes a desperate struggle to keep still, and *looks like it*. Now the portrait of a gentleman with an expression of firm determination to keep steady, as if rigidity was the one absorbing passion of his life, is not a pleasant object to contemplate.

The rest should be a comfort instead of a nuisance. It should be adjusted to the head, and not the head to the rest. It should never be applied until everything else is ready. A sitter should never have time to feel how ridiculous he looks, and the longer he is fixed to the rest, the more this feeling obtrudes itself. The plate should be exposed as quickly as possible after the rest is placed. If a slight alteration strikes you as a possible advantage, it is better to give it up than disturb the sitter at this moment; but if there is anything gravely wrong in the pose or dress, it is better to begin all over again.

The rest should be understood to be, and used as, a delicate support to the head and

figure, not a rigid fixture against which the figure is to lean. The rest, as used in most studios, is a great deal too heavy. There is no occasion whatever for the cumbersome iron supports so often used. For ordinary portraiture I prefer a light, simple rest without any complications—one that can be easily carried about after the sitter without trouble. I have no fixed place for the sitter in my studio, but place him in any part, just as the fancy strikes me, and it is here I find a light rest of so much use. A perfect rest has yet to be made. It must be moderately light and portable, and very simple. The complicated movements of the ordinary machines, often with chairs attached, are worse than useless, and very confusing.—*London Photo. News.*

Retirement from Business.

MR. M. SMITH has disposed of his photograph gallery, No. 257 Main street, to Mr. Charles Schaffer, a resident of this city. Mr. S. is a good artist and we bespeak for him a liberal share of the public patronage. Mr. Smith, whose health is impaired from close confinement to his art, will retire from active business and seek long needed rest abroad. We are sorry to lose Mr. Smith, who during his stay of a few years here has built up one of the best paying galleries between New York and Albany, and has no superior in turning out first-class work. He has a large circle of friends who will join with us in wishing him full restoration to health, and that he may conclude to return to this city and make it his future home.—*Poughkeepsie Courier.*

THE great inconvenience constantly experienced from want of uniformity in weights and measures has occasioned an effort on the part of the Berliners to adopt standard measurements for plates and apparatus; but the sizes given do not seem to afford satisfaction, the measures in centimeters not corresponding with those commonly made in inches, and not convenient for the sizes of glass and paper generally procurable.

Report of the Photographic Section of the Amer. Institute.

NEW YORK, December 2, 1884.

The usual journals were received and also the *Journal and Transactions of the Photographic Society of Great Britain* for October, and a copy of a new journal published in London called the *Amateur Photographer*, for which the customary testimonial of thanks was given.

Mr. GARDNER said that a chalk talk by Prof. McSpedon was on the programme of the evening, but the gentleman was unavoidably absent. At the next meeting the subject of Photographic Ethics would be considered by Mr. Percy A. McGeorge.

Mr. GARDNER, chairman of Executive Committee, read a report of books not found in the library (and which that committee thought it should contain), stating that the board of trustees of the American Institute had made an appropriation of \$150 for their purchase and incidental expenses.

A paper was then read by Dr. Ehrmann on the subject of *Photographic Literature*.

Mr. D. COOPER, on being introduced, stated his experience in regard to the desirability of rinsing the dry plate with water and immersing in carbonate of soda previous to development, concerning which an interesting colloquy ensued.

Mr. FISK. I have here an instantaneous picture made about ten days ago. It was taken at about half-past one with moderate sunlight. In the right hand picture (of two teams), one horse trotted a mile in 2.15, and in the other, the two horses trotted a mile in 2.21. I made four pictures, but in the first two it was almost impossible to get any detail. The second, which is this, I developed with the same solution and the same strength. I thought, what might be the result if I could keep that solution upon the plate all the time? As soon as I saw the high lights appear, with my finger I rubbed the plate about ten minutes, and thereby obtained these results, which I could not have got by any other application known to me.

Mr. NEWTON. I think Mr. Fisk's pictures of the trotting horse are remarkable ones. They are entirely different from those I have seen by Mr. Muybridge. The mode of developing by rubbing the plate with the finger is quite novel. A camel's-hair brush used on the plate would hasten the developer very perceptibly.

The picture created quite a sensation.

Mr. PARTRIDGE. I have here a photograph taken in the coal mine of the Indian Ridge Colliery. The seam of coal is fifty feet thick, and it was designed to show what the interior of a coal mine looks like. A dynamo and steam engine were lowered 300 feet down the shaft and carried along horizontally 2000 feet and set up, for the first time in the history of the world. Some of the workmen of the mine were astonished, and many thoroughly frightened. A light placed at a height of 70 feet showed an immense mass of coal hanging from the roof, and apparently ready to drop at the sound of the voice. Mr. Davis said that the electric light could never be used in a coal mine; it made the danger altogether too visible. Some other singular effects not expected were also shown. Instead of having one point of blackness representing the two points of the carbons close together, they were so far away that the spots on the photograph appeared as points separated by seven inches. There were also fine circles of light. The exposure was 90 minutes.

Mr. PARTRIDGE then proceeded to describe his experiences with varnish, highly recommending one recently introduced by Mr. H. T. Anthony. He also explained his experiment with the opera glass, as published elsewhere.

The PRESIDENT. Before we adjourn I would like to hear from Mr. J. Traill Taylor, who has just arrived from England and is present with us to-night.

Mr. TAYLOR. All I have to say is, that I have nothing to say to-night.

Some discussion then ensued on the subject of washing negatives, supplemented by the following:

Dr. EHLMANN. In regard to washing negatives Dr. Stolze asserts that salts of lead with hyposulphite causes in a gelatine film a more dangerous salt than hyposulphite itself. There are two double salts formed in fixing between the silver and hyposulphite of soda; one is soluble and one is not soluble, and one is sensitive to light. A negative partly fixed, taken out of the hypo, will become yellow, which can never be removed with any chemical.

Mr. NEWTON. I should take issue with anyone who says that salts of lead are as dangerous an element in photography as hyposulphite of soda. Anybody who makes a statement of that kind evidently bases it upon theory, and I know of none that will justify such an one.

Anybody who knows anything about the salts of lead or sulphite of lead knows that it is one of the most stable salts we have, and perfectly insoluble in water. Sulphite of soda is one of the most soluble. Sulphite of lead will not decompose in contact with the atmosphere for 10,000 years. I clean my prints with salts of lead, and I can do so better in five minutes than with running water for twenty-four hours.

Dr. EHLMANN. I stubbornly adhere to my opinion, and if you will allow me, at some future time we will return to that subject.

Several descriptions of washing boxes, already well known, were then given, and the meeting adjourned.

Society of Amateur Photographers of New York.

A SPECIAL informal meeting of the above Society was held on the 25th ult., at their rooms, 1260 Broadway; F. C. Beach, President, in the chair.

Mr. BEACH showed specimens of gelatine film negatives made by the new film process recently patented by the Eastman Dry Plate and Film Company, and read a portion of a letter from Mr. Eastman, in which it was stated that in their improved roller holder enough film paper could be stored to permit fifty exposures of a size 6 1-2 x 8 1-2 inches, the total weight of which would be one pound less than two of the lightest Daisy double plate-holders holding but four 4-4 plates. Several specimen prints were shown made from film negatives, which were excellent. A complete demonstration of the new process with an exhibit of specimens is promised by the Eastman Co. for some future meeting.

The idea of storing in a small space a large amount of sensitive surface, with scarcely any weight, was particularly attractive to those present, and it is to be hoped that the amateur's labors will be greatly reduced by the introduction of this improved process. It was stated that a special machine had been constructed by the Eastman Co. for coating a sheet of paper two and a half feet wide by 3,600 feet long; and many of the defects due to coating on glass would be avoided.

Mr. REYNOLD W. WILCOX showed a Klein shutter just received from Germany. It was arranged to fit over different-sized lens tubes, had two revolving, thin metal shutters which were actuated by a rubber spring, the tension of which could be quickly and easily adjusted

for fast or slow speed. The shutters were enclosed in a neat, thin, mahogany box.

Several questions were then taken from the question box and answered, after which an exhibition of transparencies by the lantern was given and the meeting adjourned.

A SPECIAL meeting of the Society was held at their rooms, No. 1260 Broadway, on Dec. 9th, President F. C. Beach in the chair.

Mr. BEACH exhibited and explained his apparatus for enlarging on gelatino-bromide paper, as heretofore published in the BULLETIN. With his light it required twelve minutes or more exposure for good results on the English paper he used. Mr. T. C. Roche, with Anthony's new enlarging camera and Anthony's gelatino-bromide paper made an enlargement in forty seconds, which was greatly admired.

Mr. ROCHE by special invitation then made a practical demonstration of the process before the members and read the following paper:

First select some good glass, free from specks and scratches, and a size larger than the pictures. Clean by the aid of whiting and wash well under the tap and allow to dry; then on one side rub a five-grain solution of bees'-wax in benzole with a linen cloth and take another clean cloth and rub off the excess. Now coat the plate with Anthony's glaze collodion, and when set immerse the plate in a dish of clean water until all greasy appearance has gone; or wash the plate under the tap. This is done to remove the ether and alcohol. Now take the print and soak in clean water until it is thoroughly damp, or pliable. Place the glass on a table or any level surface and see that you have some or plenty of water on it; lay the print gently face down on the glass and then place over it a piece of thin rubber cloth and go over all with a squeegee, working from the centre to the end, first to the right then to the left. Do not press too hard. The use of the squeegee is to force out all air and water. The plate is now set up to dry. When dry cut around the edge and the picture and collodion will come off freely. If you wish to retain the collodion gloss when mounted you must paste over the print before removal some plate paper, as moistening of the print in mounting will destroy the gloss. The best results I have obtained have been on Anthony's *new* glossy rapid printing paper, which has more body, or a heavier coating.

Mr. Roche afterwards exhibited some exceedingly fine pictures made on the new por-

celain plates now manufactured by E. & H. T. Anthony & Co.

Mr. CARBUTT exhibited some fine lantern slides and made some enlargements with Anthony's enlarging camera on porcelain.

A new platinum light was on exhibition but on account of other prolonged discussions no practical tests were made.

The meeting was a very interesting one and adjourned at a late hour.

Association of Operative Photographers of New York.

DECEMBER 3, 1884.

MR. SCHAIDNER in the chair.

The minutes of previous meeting were read and approved.

Mr. C. Von Sothen and Mr. D. Cooper were proposed for membership by Mr Roche.

A paper on chemistry was then read by Mr. Duchochois, as published elsewhere.

Mr. DUCHOCHOIS. I think you will have to read this paper in print before you understand it. It is very long, tiresome and annoying to listen to, but you will find a great deal in it. After reading it you can take any book on chemistry and be able to understand it. If the beginning were not known it would be impossible to understand the remainder, and I was obliged to make a long paper.

Mr. SCHAIDNER. It seems absolutely necessary that we take the different journals to follow what is given at the different meetings. It would be impossible to sum up briefly what has been said to-night.

Mr. HALLENBECK. I think the lecture has been of great benefit to the members of the Society, as it has started them into looking into these matters more than heretofore. I understand the subject much better than I did before.

Mr. FORBES. I move that a vote of thanks be tendered Mr. Duchochois for his able paper.

Mr. ROCHE. This paper to-night is merely an introduction or explanation of the material we use. I think this is a very valuable one, and I would second the motion that we give Mr. Duchochois a special vote of thanks for that which has been read before us to-night.

Motion carried unanimously.

Mr. COOPER. I have with me some negatives which I showed at the meeting of the Photographic Section of the American Institute last night, demonstrating a new method of

development, which I consider of great importance in securing the best results from extremely rapid exposures; and it is in the line of a theory I have hitherto mentioned, viz.—the action of light on the bromo-gelatine film. This action has the effect of liberating the bromine, and leaving the silver in a partially oxidized state. In pursuance of this theory I concluded that as there was free bromine present, and, as we all know, bromide or bromine has a tendency to retard development, the sooner we get rid of it the better, either by washing the plate very thoroughly previous to development or by using ten grains of monohydrous carbonate of soda, that which is crystallized at the boiling point and contains one atom of water of crystallization to the atom of soda, which is very powerful and forms, as I believe, bromide of sodium, and being very soluble in water is readily removed by a slight washing. These pictures were all made with the drop shutter, and on a day when there was no sunlight—nothing but diffused light. One plate was treated with the ordinary soda developer, the other with the solution of soda as described, and subsequently washed and developed.

I made up ten ounces of the normal developing solution, putting five ounces in each dish. The first plate was treated with the soda, then washed thoroughly and placed in one half the solution; the second, not washed, was developed in the other dish; the latter required twice as long to bring out the image, which is much thinner.

Mr. BUEHLER. In any case, when the exposure is a little short, you would advise us to put the plate in this solution at first in order to get rid of the free bromide?

Mr. COOPER. With very short exposures let the plate remain in the solution longer and wash thoroughly. In order to preclude the possibility of doubt in regard to my theory, I exposed a plate, putting half of it in the strong soda solution previous to development, kept it moving for about 30 seconds, washed it very thoroughly and then developed it (plate shown, one half possessing far greater strength and detail than the other.)

These plates (two others) demonstrate two things:

First, that it is possible to develop a plate with pyrogallie acid so that experts cannot tell whether pyro. or oxalate has been used. Here is one developed with pyro. and one with oxalate. Both of these also are drop shut-

ter pictures; one had the full power of the oxalate developer with no restrainer. They are absolutely similar as to color, but that treated with pyro. is much superior in delicacy of detail. In the case of a negative that I know is under-exposed I weaken the developer one-half with water, and proceed very slowly. Prolonged washing under the tap will effect the same result as treatment with soda, but is necessarily much more tedious.

Mr. ROCHE. Mr. Cooper showed me these negatives, but I could not believe that they were made with the drop shutter until I proved it. They are all negatives of the roof of a building of dark brown color, and therefore difficult to photograph. I exposed a plate and forced the development so far with ammonia that it was covered with green and red fog. I then fixed and washed it. Mr. Cooper exposed one under the same conditions, and although it took a little longer to develop he brought the negative out with ample detail.

(This negative was also shown).

Mr. BUEHLER. I would like to know, Mr. Cooper, whether you give the preference to the oxalate or the pyro. developer?

Mr. COOPER. I would say that under certain conditions either the oxalate or the pyro. developer will afford excellent negatives; it is a matter of judgment on the part of the operator. In bringing out unusually fine results you cannot, I think, operate as successfully with oxalate as with pyro. It is not possible to go beyond a certain point with the addition of iron. With the pyro. you have unlimited power. The pyro. developer is much more potent; an ounce of it will go as far as a pound of iron.

Mr. BUEHLER. In case the development has been short, cannot the oxalate developer be used by adding a little hypo. as successfully as with the pyro.?

Mr. COOPER. I can accelerate with pyro. just as well as with oxalate, but I never do so, for the reason that the action which takes place seems to be somewhat uncontrollable. Putting in one drop of hypo. I obtained a greatly accelerated image. All conditions being equal; that is, the hypo. solution being of exactly the same strength, a small drop entirely reversed the result—instead of a negative I had a positive.

Mr. HALLENBECK. I would like to know why this is so?

Mr. COOPER. The chemical changes I do not understand. I will leave that to those

who are better acquainted with them. Without question that is the objection to the addition of hypo. to the pyro. developer.

Mr. HALLENBECK. I would like to know the reason it should not be used?

Mr. COOPER. I can give you no better reason.

Mr. ROCHE. A standard formula for the use of hypo. in connection with the ferrous oxalate developer was some time ago published by Dr. Eder. A later one is as follows:

Water,	125 ounces.
Hypo.,	1 dram.
Citric acid,	3 drams.

The plate is immersed in this solution for one or two minutes previous to developing, affording exceedingly good results.

I had a negative by Sarony to make a transparency from. Some of the oldest photographers in the city have seen it, and all thought it a wet plate, but it is a gelatine negative developed with ferrous oxalate developer. The only way by which I could tell it was by the peculiar greenish color. We all have our favorite modes of working. When full time can be given I prefer to use the iron developer.

Mr. POWERS. The other day I received an order for a dozen duplicate imperials. When the negative was taken out, I found that all below the person's forehead was quite yellow; above the forehead it was quite clear. What was the cause of this?

Mr. ROCHE. The negative was not fixed properly. If it had been the fault of the development, the plate would have been entirely fogged.

Mr. FORBES. The plate may have been taken out in the light before it was fixed.

Mr. POWERS. When they were printed before, six months ago, the negative was clear.

Mr. HALLENBECK. I have had the same effect by using bichloride of mercury.

Mr. COOPER. The plate may not have been thoroughly fixed, or it may not have been quite thoroughly washed.

Mr. HALLENBECK. Hyposulphite would show on the varnish.

Mr. COOPER. It has always been my idea that hyposulphite of silver, formed by the solution of bromide of silver with hypo., if not properly washed out would become discolored by light, not immediately, perhaps, but it would continue to discolor after once being exposed. I have found negatives entirely de-

stroyed when that was the case. Negatives not properly fixed, on turning them over and looking at the back, generally show a whitish effect. Although three months old the fixing bath removed the discoloration.

Mr. DUCHOIRS. Mr. Cooper is quite right. The instability of hyposulphite of silver is well known.

Mr. BUEHLER. There is no reason why it should not come from the prints being made on damp paper. If you print on paper immediately after the removal from the fuming box, there will be a deposit of nitrate of silver on the negative, which causes it to turn yellow.

Mr. HALLENBECK. The Scovill Mfg. Co. have just received the second importation of Porcelain Gelatine Plates for making transparencies.

Mr. ROCHE. I have been working on porcelain plates both polished and mat surface, and coating them with the same preparation I use on Anthony's Transparency plates. These are of home manufacture and can be had of Messrs. E. & H. T. Anthony & Co., in any size.* Adjourned.

Hyposulphite as a Fixing Agent

Is rather tolerated than loved, Hence Dr. Liesegang's recent experiments on fixing with a solution of common salt or a solution of ammonium chloride, or with ammonia, possesses especial interest.

Thus we may briefly sum up his results: Collodio-chloride prints, citro-chloride films, and gelatino-bromide plates, may be satisfactorily fixed by means of a strong solution of chloride of sodium (common salt) or chloride of ammonium, but the latter is to be preferred. A little ammonia added to the bath expedites the fixing action.

Apart from the desirability of no longer using hyposulphite, it appears that the ammonium chloride fixing bath has the advantage of requiring less exposure and giving more delicacy in the half tones, as little or no reduction takes place during fixation. It is also stated that less gold is required in toning.—*London Photo. News.*

* "Mr. Hallenbeck would have liked had Mr. Roche" not "made his announcement" supplementary to his, particularly when referring to the home manufacture as opposed to the imported article.

Our Illustration.

ABRAHAM BOGARDUS.

EVERYONE knows him and knows him well as one of the heartiest, jolliest, best-natured, whole-souled men in the trade. Read what the *N. Y. World* says about him. The prints were made in his own establishment and on the celebrated N. P. A. Pensé Extra Brilliant Albumen Paper.

Mr. Bogardus is one of the happy few who can both give and take, jestingly speaking :

"Among the veterans in the photographic line must be placed Abraham Bogardus, he having been "taking faces" for upwards of forty years. He was born at Fishkill sixty-two years ago, and came to New York when a mere boy. His early life was spent as a clerk in a dry good store, but when the daguerreotype process was discovered he discarded the tape measure and studied the art of making pictures. His success was great and he did an immense business. Eventually, when the more modern photograph superseded the daguerreotype, he conducted one of the largest establishments in the city at Broadway and Fourth Street, employing thirty assistants. For seven consecutive years he has been re-elected President of the National Photographic Association, and during his photographic experience he has taken the portraits of four presidents and nearly all of the houses of Congress. He is a fine-looking and large gentleman, with full, gray beard, and always wears a happy countenance. He is good company and quite a wit, which renders him a welcome guest at all of the banquets of the fraternity, where his after-dinner speeches are much applauded."

Pictures Received.

FROM Mr. G. W. Floyd, of Minneapolis, Minn., a very excellent portrait on a commercially unknown plate. The pose is natural and pleasing, and the details astonishingly preserved. A handsome new residence is also well done, notwithstanding its having been a little too near the instrument.

Northwestern Photographic Stock Depot.

MILWAUKEE, WIS., Dec. 1, 1884.

TO MY PATRONS:

I have to-day sold my business to Messrs. Paul & Shape. In taking leave of my customers, for whose liberal patronage I wish to express my thanks, I can give them the assurance that I leave the business in competent hands. One of my successors, Mr. W. C. Paul, has been with me for seven years, and is thoroughly acquainted with all the details of the business. I would, therefore, ask a continuance of your patronage for the new firm.

The accounts and outstandings to date are payable to me.

I shall retain the laboratory connected with the business, for the making of chemical analysis only, and my address will be as heretofore, No. 11 Grand Ave.

Yours very truly,

GUSTAVUS BODE.

Referring to the above card, we beg leave to say that we will carry on the business in all its branches, viz:

Photographic stock, artists' materials, and the recovery of gold and silver from photographers' waste, and that by prompt attention to business, and to the wishes of our patrons, we shall strive to merit their entire satisfaction.

Soliciting your valued orders, we are,

Yours very respectfully,

PAUL & SHAPE.

Balance-Tray of Mr. Leon Baluze.

M. LEON BALUZE has constructed a balance-tray moved by clock-work, which can receive on its movable platform a tray up to 11 x 14 inches. The movement can be accelerated or retarded. It winds up as a clock and can run more than an hour, and works without noise or jarring. This apparatus can render great service in developing gelatine plates, or for other operations when constant movement of the liquid is indispensable.—*Le Moniteur de la Photographie*.

Lord Mayor Nottage,

TWENTY years ago the man who would have predicted that photography was likely to prove such a stepping-stone to fortune that the high office of Lord Mayor would be held by one who had attained a commanding position by the commercial pursuit of the art would have been a fair butt for sarcasm. Yet, as our readers are aware, such a hypothetical vaticination has been fulfilled this year in the election of Alderman Nottage as Lord Mayor of London. Mr. Justice Grove, acting in the absence of the Lord Chief Justice at the official reception of his lordship, made a happy allusion to the Stereoscopic Company, tracing the invention of the stereoscope to Leonardo da Vinci's discovery of the true functions of the eyes in binocular vision, he having pointed out (in his treatise *Trattato della Pittura*), that each eye saw a different picture, the coalescence of which enabled the sensation of relief to be felt. The speaker also bore high testimony to the present position, and the possible future, of photography. We are sure that all our readers will join Mr. Justice Grove in his congratulations to the Lord Mayor upon his acceding to the dignity of the high office, and they cannot but possess a feeling of gratification at the dignity of their profession in reading the learned justice's further congratulations to the Lord Mayor, upon "having in your honorable pursuit been connected with matters of such great interest, differing so greatly from the common matters of business with which most Lord Mayors have been concerned."—*British Journal of Photography*.

HACKETTSTOWN, N. J., Dec. 6, 1884.

MESSRS. ANTHONY & CO.

Gentlemen: In spite of all any one can say or show, I am convinced that for quick, clean, crisp, brilliant work, the Eastman Specials cannot be equalled; and I know that I but echo the honest sentiments of hundreds of our fraternity.

Respectfully yours,

C. C. KENNEY.

Interior Views.

WE have just been shown a series of twenty-one 14 by 17 interior views by Mr. F. L. Howe that for selection of light and position are absolutely faultless, and may well be used by the very best artists as standards of excellence.

The chemical effect is exquisite, and the printing, toning and finishing leave nothing to be desired.

These pictures were made with the Dallmeyer wide angle rectilinear lens on Eastman's special plates, by the formula for development with soda used and recommended by Mr. David Cooper, as published below:

No. 1.

Anthony's Sulphite Sodium
crystals, 1 lb.
Distilled water, 2 qts.
Anthony's Pyrogallic Acid, . . 2 oz.

No. 2.

Anthony's Crystallized Car-
bonate of Soda, $\frac{1}{2}$ lb.
Water, 2 qts.

To develop, take:

No. 1, 2 ounces.
No. 2, 2 "
Water, 2 "

For restraining over exposure use, to the above quantity of developer, one-half to one dram of

Beomide *potassium*, . . . 1 ounce.
Water, 6 ounces.

PHOTOGRAPHING colors is a main question of the day, and in the *Bulletin Belge*, Captain Abney once more calls attention to the fact that the addition of Prussian blue to gelatine emulsion makes it more sensitive to the yellow than the blue; or, to put the matter more clearly, the sensitiveness to the blue is diminished below the yellow. Abney has found but little or no advantage in using isocromatic plates for landscape work, and he attributes this to the fact that almost all colored bodies reflect very much white light.—*London Photo. News*.

The "Fairy" Camera.

NEWTONVILLE, MASS.

MESSRS ANTHONY & CO.

Gentlemen: Please find enclosed twenty-five dollars on account of the Fairy outfit which you sent me some time since

I need not say of this compact little instrument that it is just the thing for the purpose intended, and I am quite sure there is nothing in the market that can surpass it. It should be seen and used to be appreciated.

The Platyscope lens works like a charm, nothing better being required for the most exacting professional or amateur. I would exchange it only for another just like it.

Yours, etc., G. H. LOOMIS.

M. DE LA LAURENTIE has written to the President of the *Société Française de Photographie* concerning the necessity of uniformity among photographers on the subject of the creation of a simple and cheap standard sensitometer. The sensitometric scale composed of thin sheets of paper superimposed has never given good results, because, aside from the variations in color and translucency of the paper, the action of light loses all proportion when a certain number of layers are superimposed.

A member of the Society suggested that without using the phosphorescent plates of the Warnerke sensitometer, these would be a great advantage in using graduated translucent scales. However, the great object is to have all the graduations correspond to a uniform standard. The difficulty to overcome is the creation of a standard of light. In the meantime M. de La Laurentie proposes the use of a stearine candle of an indicated brand, as the best standard of light.—*Le Moniteur de la Photographie*.*

BENZOLE, containing a small proportion of resin, is said to have the effect of removing green fog, though doubt is expressed as to the part the resin might play.

* Translated for the BULLETIN by R. W.

Death of Mr. Henry Greenwood.

WE are sorry to have to announce the death of Mr. Henry Greenwood of Liverpool, whose name as proprietor and publisher of the *British Journal of Photography* has been more or less familiar to the photographic public since 1854. In that year the Liverpool Photographic Society started a journal the printing and publishing of which was placed in the hands of Mr. Greenwood, who at that time was a printer and stationer in Liverpool. He soon afterwards purchased the proprietary rights in the *Liverpool Photographic Journal*, which was at first issued monthly and then fortnightly. Over twenty years ago it merged into a weekly publication, the title having been previously changed to that of the *British Journal of Photography*.

Mr. Greenwood devoted all his energies to the rendering of his journal one of active living interest, and indirectly to him, owing to the encouragement he gave to experimentalists and scientific and practical writers, is the art greatly indebted for the advanced state in which it is at the present time.

Mr. Greenwood was attentive to the routine matters of every department of his extensive business to a degree that was perfectly astonishing, and he was an indefatigable correspondent, his letters being models of elegant English composition.

In business matters he was strict and upright—promptness, integrity and punctilio were recognized characteristics of our deceased friend. In social life he was kind and hospitable, and unremitting in his endeavors to make visitors from a distance forget that they were among strangers. Our Mr. Edward Anthony during a visit to Europe some time ago had ample opportunity of ascertaining this of Mr. Greenwood's disposition, and a warm feeling of friendship had ever existed between him and us.

A few months ago he received a severe domestic blow by the death of his wife, to whom he was devotedly attached, and this

induced such lowness of spirits as to render him incapable of coping with an attack of sickness from which under other circumstances he would probably have soon rallied. His age exceeded sixty years, and up to the period of his domestic loss was a man of iron constitution, his mental and intellectual vigor remaining unimpaired to the last. He leaves a large family, one of his son's being grown to manhood.

Dialogue.

SCENE IN A DARKROOM.

Demonstrator about to develop a plate, first proceeds to wash thoroughly before placing in the developer.

Mr. Interrogation Point.—Now, Mr. Demonstrator, why do you wash that plate so much before development?

Demonstrator.—Well, you know, our exposure was very rapid and I want to get all I can out of the plate, and I find that a thorough washing before development enables me to secure almost twice as good a result with a normal developer as I could by using a very strong developer without previous washing.

Mr. I. O. Point.—You don't say so. Why, I have always supposed that washing before development would partially destroy the image.

Demonstrator.—What gave you that impression?

Mr. I. O. Point.—Well; I was under the impression that it would wash away a good deal of the free silver, as it would on the wet plate, you know.

Demonstrator.—But this is a dry plate, and there is no free silver, at least not in a form that is soluble in water.

Mr. I. O. Point.—Well, now I know what you expect to get by washing, but I would like to know what reason there is for your expecting that result?

Demonstrator.—Now I will tell you what is my reason, and if you are satisfied when the result is produced that it is satis-

factory you can credit me with an idea. If it isn't just as I say, you are at liberty to discount or protest my draft on your credulity.

Mr. I. O. Point.—All right ; go ahead, I am all attention.

Demonstrator.—I shall try to be as definite in my statement as possible ; but if I should say anything that isn't quite lucid, just say so, and I will try to filter out the cause of misunderstanding.

Mr. I. O. Point.—Exactly.

Demonstrator.—As I was about to remark my reason for adopting this method is due to the investigation of a theory I have always held relative to the action of light on a gelatino-bromide plate. I have felt convinced by several facts connected with the working of the dry plate that the action of light caused a decomposition of the bromide of silver, the silver being deposited in a slightly oxidized metallic form, while the bromine being liberated, remains in the film in a form partially soluble when washed in water. The partial removal of this bromine by washing reduces the retarding influence on development, and gives the appearance of increased time to the image. A result even better may be obtained by first flowing the plate with a solution of sal soda, ten grains to the ounce, for about thirty seconds ; this changes the bromine present in the film into bromide of sodium, which being very soluble in water enables one to completely remove all the bromine present with corresponding advantage in the result after development.

Mr. I. O. Point.—This certainly seems to be a sensible proposition, and I see many advantages in its use ; but I would like to know something further on this action of light. You said there were several facts upon which you based this theory ; do you mind mentioning them ?

Demonstrator.—Certainly not. The first is—The presence of bromide of sodium in a soda developer when nothing of the kind had been placed in the solution.

Secondly.—The odor of bromine, which is exhaled from a gelatine plate only after it has been exposed to the light and then dampened.

Thirdly.—The action which I have just been explaining to you as the result of flowing with soda and then washing.

Mr. O. I. Point.—These certainly seem to be good reasons ; and, as you call them facts, I am inclined to respect them and give them a trial.

Demonstrator.—I hope you will, and I shall be glad to hear from you on the subject ; and if any of your friends would like to inquire further I will try to explain my position more in detail in the columns of the BULLETIN.

BICHRIMATE of potash in several instances proved very detrimental to those who have been obliged to engage in its use or manufacture. Some persons, however, seem to enjoy perfect immunity even from constant use, while others are afflicted fearfully. One gentleman known to us in this city has for years endured untold agonies, and been obliged to seclude himself altogether at times by reason of an uncontrollable desire to scratch the offending cuticle on the hands and other more inconvenient portions of the body. It was a common thing to see him when obliged to present himself with all his digits bound up in cloths. So troublesome did this become that he was at times obliged to absent himself from the presence of ladies entirely. In Europe it seems the workmen employed in its manufacture have by inhaling it lost the septum of the nose, and then strange to say, the trouble ended. Snuff has been found a preventive for this form of the disease and rubber gloves or finger cots are recommended for the hands, especially if the skin be punctured or abraded.

THE artistic in photography seems to be gaining ground rapidly, for descriptions seem no longer to be sufficient, and to be acceptable they must now be accompanied by sketches. Some of them are quite instructive in affording a ready idea of the composition though scarcely flattering, one would think, to the persons they are supposed to represent. Cannot some better method be adopted ?

APPARATUS is again receiving attention and medals are proposed for deserving novelties exhibited. Should not the Fairy Camera be awarded one?

WE regret to learn of the death of the 5-year old daughter of Mr. George R. Angell, Miss Florence Catherine Angell, on the 2nd inst.

CINCINNATI, Sept. 24, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gentlemen: The camera came on time and I was very glad to get it. I used up nearly all the plates I had with me on my trip of five weeks. This camera (the detective) is just the thing for a traveller to carry. It should have been called the "Tourist's Camera." I have developed eighteen good clear plates since I returned. I have had three or four different cameras, but this one is the only one I shall carry on long trips.

Very respectfully,

HENRY H. VAIL.

To The Unknown

Editor of the Amateur Photographer.

GREETING:—Mr. McGeorge herewith tenders his acknowledgements for so many kind notices. But one statement at least seems to have been misunderstood. Over ten thousand journals of different kinds are actually catalogued here, and it would be difficult to find one which has not said a good word for photography since the introduction of gelatino-bromide, and they would do so again should occasion offer. Fact.

Caskell's Hand Book of Useful Information.

WE have just received from the publishers a book with the above named title. It contains Statistical Tables of Practical Value for all classes of workers in every department of human effort, and a compilation of facts for ready reference on various subjects. It will be sent to any address by mail, post-paid, on receipt of 25 cents, by

GEO. W. OGILVIE, *Publishers*,
230 LAKE ST., CHICAGO, ILL.

HERR KARL KLAUSER, of Farmington, Conn. has favored us with a neat little circular, which indicates much greater activity than many possess or believe possible. His productions are very highly complimented by many well known authorities.

THE advantages of the decimal system of weights and measures are daily becoming more apparent. The fact that a gram by weight is practically the equivalent in quantity of a centimeter by measurement ought to be a strong argument in favor of its immediate adoption.

OAKLAND, Me., Dec. 16, 1884.

MESSRS. E. & H. T. ANTHONY & CO.

Gents: I wish to say a word in favor of Eastman's Dry Plates, and perhaps some one may profit by my experience. A year ago I had trouble with them. I developed in a white porcelain tray. They all fogged. This winter I tried them again and used a black japanned tray and have had no trouble. I know this to be a fact. I tried a 5 x 7 plate, made two exposures just alike, cut them apart and developed one in the black tray and got a good negative; the other I developed in a white tray, and had a foggy, thin negative. I have no trouble now, and would not change back to wet plates for anything. Yours, etc.,

G. ROBINSON.

THE paper of Mr. Duchochois in our present number is one that will repay careful perusal, especially by those who have not already mastered elementary chemistry. The statements are singularly clear, definite and succinct. These essays will surely prove unusually interesting and useful, and worthy of strict preservation.

A NEW Photographic Association at Birkenhead, England, is announced with Mr. J. A. Forrest at its head.

ONE of our delighted friends has broken out into poetry. The verses will be found on the 20th page of advertisements.

Special Notices.

New York Crayon Company.

Many photographers having expressed a want of better facilities for obtaining enlargements finished by the New York Crayon Company propose to furnish them of artistic merit and at reasonable prices, as follows :

11 x 14 and 14 x 17 inches, \$5 00 to \$15 00
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18 x 22, \$2 90 ; 25 x 30, \$4 00.

Solar negatives, if furnished, 75 cents extra. All orders should be addressed to

E. & H. T. ANTHONY & Co, Sole Agents.

The Photographisches Wochenblatt—

Is the name of a sixteen page German journal edited by Dr. F. Stölze, and issued weekly in Berlin. We shall be happy to receive subscriptions for it, the rate being 10 marks, equal to \$2 60. It is unnecessary to add that the name of Dr. Stölze is one of the most prominent in Germany in connection with photography.

I wish to solicit the correspondence of a retoucher in Northern or Western New York. Send samples of work. I wish it distinctly understood that none but such as can do work equal to the best in the country need trouble themselves. Address

P. O. Box 1216, Lockport, N. Y.

PLATINOTYPE MATERIALS.

Having increased my facilities for the manufacture of platinotype salts, etc., I am now prepared to furnish licenses and others, with all materials for Willis's platinotype process, at reduced prices.

Materials for the above process are not patented, and consequently, free to all.

THOS. H. MCCOLLIN.

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Wanted.—By a young man a position as photo. Printer. Thoroughly understands the business, has four years' experience. For further particulars

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"Nothing irrelevant, obsolete or tedious."—*Philadelphia Photographer.*

Big Chance.—\$300. I have a *good* lighted, well arranged Photo. Gallery for sale; very handy for working. I have run it for nine and one-half years. Good location; good country, 2,500 inhabitants. For particulars address

C. & S., Box 11, Mendota,
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A Practical Photographer of long experience, will accept a situation as Operator in some first-class gallery. Address PHOTO.,

Care P. Smith & Co.,
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Gallery wanted.—Anyone having a gallery with good light for sale for from \$800 to \$1,000 can hear of a cash purchaser by addressing

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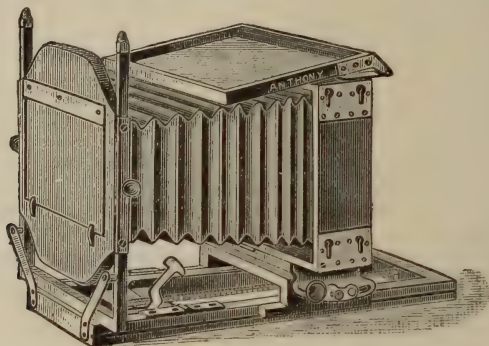
Situation Wanted.—An Experienced Photographer, competent in all the branches of the business wants a permanent situation. Address at once

RETOUCHER L.,
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1001 S. 5th Street St. Louis, Mo.

FAIRY CAMERA.

It has long been our desire to place before the public a camera that would at once embrace these most necessary requirements—portability, compactness, and strength, combined with beauty and accuracy of working.

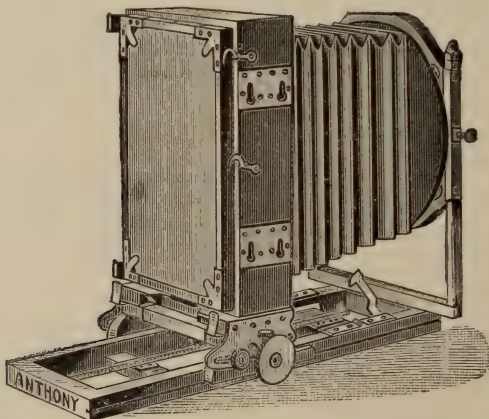
Hitherto the nearest approach to this has been the “Novel” camera, which for a time seemed to be everything that could be desired. But urgent calls for something still better were frequently made, and we therefore devised the FAIRY CAMERA, by far the most attractive and elegant piece of apparatus of its kind ever offered. In presenting it we invite attention to the following advantages it possesses over all others.



WITH STEREO. ATTACHMENTS, WHEN USED HORIZONTALLY.

Strength.—They are put together as rigidly as wood and metal will admit of, and are therefore *perfectly* rigid.

Compactness.—They occupy less space than any other view cameras of the same capacity, and the plate-holders actually require little more than one-half the room of the lightest of any others in use. The plate-holders are made of hard wood, with metal carriers for the plates, and fitted with all the later improvements.



5 x 8 WITH STEREO. ATTACHMENTS, USED VERTICALLY.

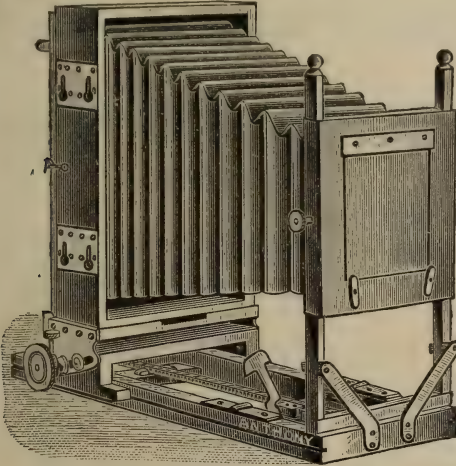
Portability.—The small compass to which they may be reduced render them in this respect incomparably superior to any. They are packed in canvas-covered wooden cases—and each double plate-holder has its own compartment. The cover of the case telescopes over its body.

Several new features have been availed of in the construction of this camera, to wit: The bed may be instantly rendered rigid, *without the use of screws*, by means of a brace of hooks that hold the two sections of the bed with great firmness.

Secondly.—The rabbet commonly found on the plate-holder is dispensed with, and instead it is placed on the camera, thus saving the otherwise additional weight rendered necessary for twelve such rabbets when made on the plate-holders (two on each of the six usually carried), and the no inconsiderable item of three-quarters of an inch in bulk.

Third.—The Camera is focussed with a long, continuous metallic rack, cog wheel and pinion, the latter being held firmly in position by a binding screw.

The ground glass swings backward in its frame, like that in the regular Novel Camera,



WITHOUT STEREO. ATTACHMENT.

and is held tightly in position by metallic spring corners. When windy, this is a decided advantage.

The Fairy Camera is made in finely polished mahogany, the metal work being nickel-plated, thus making it the most elegant and perfect camera known.

At present they may be had in four sizes, as follows:

<i>Including one Double Dry Plate-Holder.</i>				<i>Including six Double Dry Plate-Holders.</i>			
4¼ x 6½, without stereo. attachments,	\$40 00	4¼ x 6½, without stereo. attachments,	\$52 00	4¼ x 6½, without stereo. attachments,	\$52 00	4¼ x 6½, without stereo. attachments,	\$52 00
5 x 8, " " "	42 00	5 x 8, " " "	55 00	5 x 8, " " "	55 00	5 x 8, " " "	55 00
5 x 8, with " "	42 00	5 x 8, with " "	55 00	5 x 8, with " "	55 00	5 x 8, with " "	55 00
6½ x 8½, " " "	45 00	6½ x 8½, " " "	65 00	6½ x 8½, " " "	65 00	6½ x 8½, " " "	65 00
8 x 10, " " "	50 00	8 x 10, " " "	75 00	8 x 10, " " "	75 00	8 x 10, " " "	75 00
<i>Fairy Plate-Holders only.</i>							
4¼ x 6½, each,	\$3 00	6½ x 8½, "	5 00	6½ x 8½, "	5 00	6½ x 8½, "	5 00
5 x 8, "	3 00	8 x 10, "	6 00	8 x 10, "	6 00	8 x 10, "	6 00

Naturally, those without stereoscopic attachments are still lighter and a trifle more compact than those with, and may be preferred by persons who desire to make single portraits or views only.

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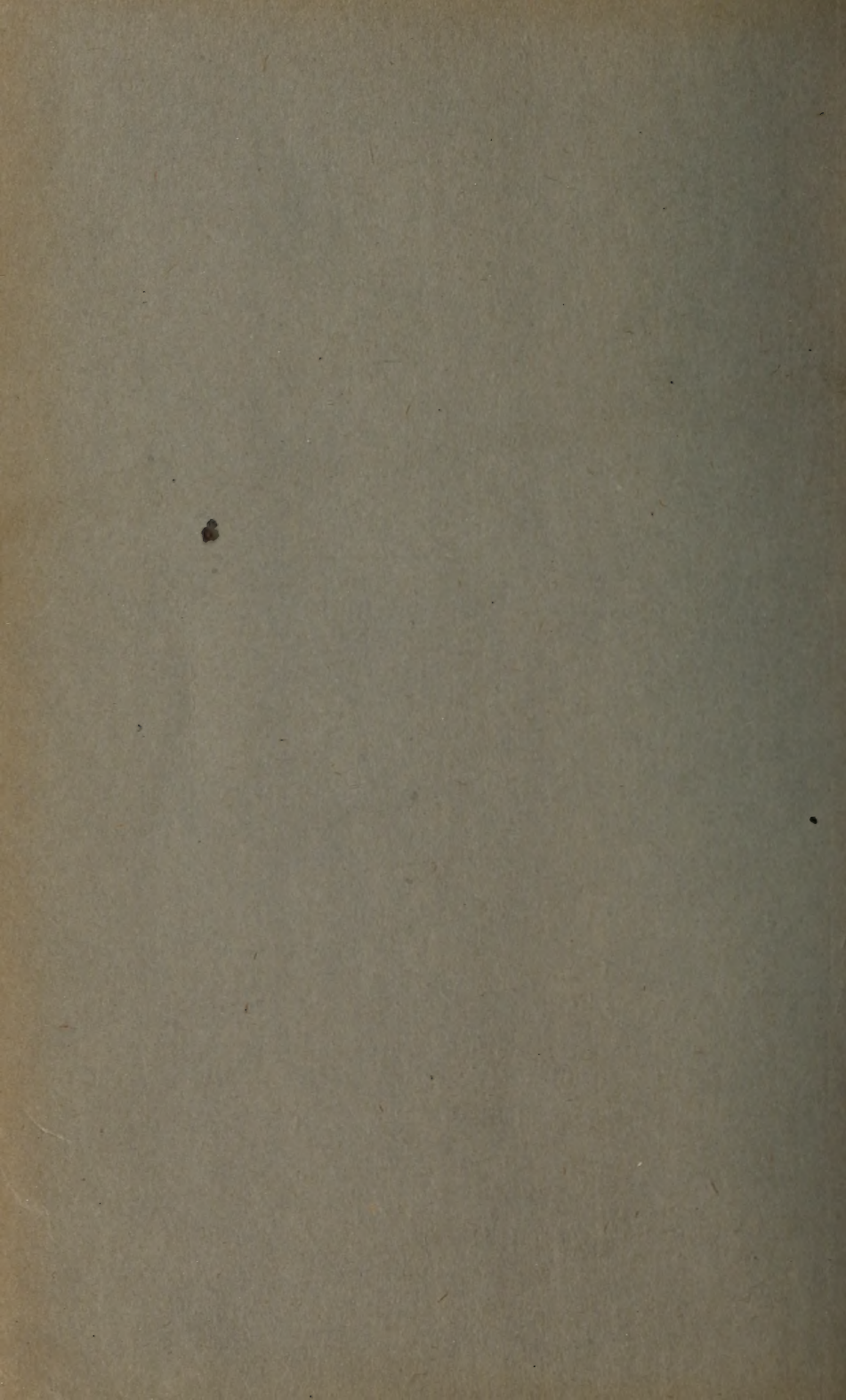
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